328

Senior Secondary Course

Psychology

Part - 1

NATIONAL INSTITUTE OF OPEN SCHOOLING

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NIOS SENIOR SECONDARY - PSYCHOLOGY (328) NEW

Complete Textbook (24 Lessons)

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1

UNDERSTANDING PSYCHOLOGY

Human beings are biological organisms. Among various systems that run our body, the job of the nervous system is to control the functioning of the human body. It is built of nerve cells that transmit information to and from different parts of our body. It controls our sense organs and also our abilities to attend, perceive, think, learn, memorise, recall, feel and behave in the context of our environment. An immense need is felt to understand these diverse processes. The common man's perspective of Psychology is quite different from that of a trained psychologist. The scientific view considers that psychological research and studies will help us observe, describe, control, predict and improve human behaviour and emotions.

Most of our everyday life experiences are based on principles of Psychology, of which we may not be aware. For example, providing care to one's ailing grandmother explains that compassion and love are crucial. Another example may be that of a very hardworking girl who had to leave school due to financial constraints but was able to sustain her family by working part-time. Her positive behaviour helps her family in overcoming financial challenges. Some of you may (have high 'willpower') have an interest in human behaviour or a determination to learn , hence you joined this course. In order to manage time to study this subject, you may have to delay some of your needs or tasks that give you pleasure. This refers to self-control and is practised by many of you. Now, you can also think of such examples from your life. The subject matter of Psychology is vast and covers each aspect of human living.

LEARNING OUTCOMES

After studying this lesson, learner :

- explains the need for the study of Psychology as a discipline;
- describes the nature of Psychology;
- states and explains that Psychology is both a Science and Social Science;
- discusses the evolution of Psychology;
- enumerates the relationship of Psychology with other disciplines; and
- describes the applications of Psychology.

1.1 NATURE OF PSYCHOLOGY

Psychology is a scientific study of all these experiences, behaviours and mental processes like knowing, thinking, reasoning , understanding etc. These mental processes are also part of human cognition. The study of Psychology is important as it helps improve the lives of people. It enables them to develop an insight into their thoughts and actions.

Human beings are endowed with the ability to think. This makes them different from many other organisms. Before starting this course you must have thought about whether you should study Psychology or any other subject. You must have discussed it with your family members or your friends. Similarly, every day you (may) have many other thoughts of some or the other issue in your life. For example, you must also have thought of what to wear when you were visiting your aunt for the weekend. Many such thoughts occur in your mind. This thinking leads us to behave in one or the other manner. This behavior can be (sometimes) observable, i.e. others can see our actions. For example, when you are playing a Cricket match everyone can see and know that you are playing. Thus, playing is an observable behaviour. On the other hand, when you are playing a game of Snakes and Ladder the persons around you may not come to know your next move as the behaviour is covert, ie it cannot be (known) seen by others. The past behaviors and thoughts will help you in forming your experiences. These experiences are also determined by external factors like climate, home, family, school, neighbourhood etc. Some of these factors may not be under your control. Your experiences are also very specific to you. For example, your experiences of weather conditions may be different in your village than that of your cousin's in her village. Your experiences may also be determined by your feelings and emotions which

are an inherent part of your 'self'. Human beings try to know their own self and the environment around them.

ACTIVITY

Try to think of all that you did or thought yesterday. Enlist them under various subheadings of behaviour or mental processes.

INTEXT QUESTIONS 1.1

1. The study of Psychology includes knowing more about

   a. Experiences

   b. Behaviour

   c. Mental processes

   d. All of the above

2. Thinking, reasoning, concentration and attention are included in

   a. Human memory

   b. Human cognition

   c. Human emotions

   d. Human experiences

1.1.2 Is Psychology A Natural Science Or A Social Science ?

ACTIVITY

Mark the following statements as T for true and F for false.

1. Psychology studies human behaviour in the social context .
2. Psychologists study the effect of culture on perception.
3. Psychologists study how reward and punishment can affect behaviour.

4. Psychologists study the functioning of endocrine glands.

5. Psychologists study the effect of motivation on task performance.

6. Psychologists study the impact that physical injury has on feelings.

7. Psychologists study that hormonal changes affect emotions.

8. Psychologists study the functioning of the human nervous system

9. Psychologists study that socialization agents like school, family and peers affect a child's behaviour and learning.

10. Psychologists study the relationship between positive thinking and overall wellbeing.

The answer to all the above statements is 'True '.

Now let us know some Myths about Psychology

Myth: Psychology Majors Are Mind-Readers

Myth: Psychology Is Not Really a Science

You will be surprised to note that psychologists study the physiological functioning of the human body scientifically. They also study the effects of culture and society on a human being , also, in the most scientific manner. Psychologists are aware of the vast cultural and ethnic diversity. These differences are recognized and are included in the effort made by of psychologists to understand human behaviour. Human beings are studied in the social context to understand their interactions with one another on the basis of their culture. Culture is the man-made part of the environment. It influences humans over generations. Parenting and socialization practices influence the child rearing practices, behaviours, interpersonal relationships, attitudes and most of our attributes.

Thus, Psychology tries to navigate the pertinence of sociocultural (values) environment in understanding human experiences, emotions and actions. Therefore, Psychology is recognized as a Social Science.

Psychology is a systematized body of knowledge. In that, it has a scientific orientation. Scientific knowledge is gathered by conducting experiments, making systematic observations and measuring events. The data collected and recorded is open to objective verification, replication and analysis. Measurement and data collection in Psychology is not an easy task. The attributes being measured can be sometimes abstract. Thus, certain rules and controls are framed in order to get unbiased results.

Experiments in Psychology are also based on a hypothesis. A hypothesis is a tentative statement which is to be proved through the research. (You will learn more about this in another chapter). This research also helps in predicting by summarizing and interpreting the results of research. Psychology is also considered a Natural Science as it uses the scientific methods. The scientific authenticity of much of the research undertaken throughout the various behavioral science fields is also much debated. But it is clear to us that Psychology is both a Science and a Social Science.

INTEXT QUESTIONS 1.2

1. Psychology is a natural science because it
    a. is based on empirical,verifiable data
    b. studies aspects of Biology
    c. studies aspects of Physics
    c. studies aspects of both Biology and Physics
2. Psychology is also a Social Science because
    a. it studies various cultures
    b. it studies various aspects of geographical conditions influencing a culture
    c. it studies about human being in the social and cultural context, where it is difficult to gather data.
    d. it is related very clearly to Sociology, Economics and Geography.

1.2 EVOLUTION OF PSYCHOLOGY

Early psychologists were encouraged to think that mental processes, behavior and experiences could be studied using scientific methods. Study of Psychology evolved from Philosophy about 150 years ago, when scientific thoughts led to experimental advances in the field of Psychology. The subject matter of interest to psychologists evolved over the years, as various schools of thoughts emerged with varying ideologies and theories. The following are the major schools of Psychology.

Structuralism

Structuralism was an early school of Psychology. The structuralists established that Psychology is the study of the structure of mind and consciousness (awareness). The method used by them to understand conscious processes was introspection. Through introspection the subject describes his/ her conscious experiences. The first psychological laboratory was established by William Wundt, a structuralist, in Liepzig, Germany in 1879.

ACTIVITY

Observe your parents, sibling, or someone from your neighbourhood. Enlist all that you can think about their mental processes and experiences. Now, talk to them to find out their own interpretations of their experiences and mental processes. In the next column write all that they tell you about the same.

Functionalism: This new field focused not on the structure of mind (structuralist view), but on its functions. Psychologists such as William James, John Dewey and James Angell proposed that Psychology as a discipline should focus on how behaviour functions and what a mind does rather than the components or structure of the mind. Thus, the term functionalism was used to represent this school of thought.

Gestalt perspective: The Gestalt school of Psychology was founded in Germany by Max Wertheimer and his colleagues Kurt Koffka and Wolfgang Kohler. The Gestalt school emphasizes that perception is organized into wholes. Our perception and understanding of objects are more meaningful than its smaller parts. In figure 2.1 (and) it is observed that the figure is not merely a collection of dots, but the shape of a square and a circle respectively. Thus according to the gestaltists the whole is much more than the sum of its parts.

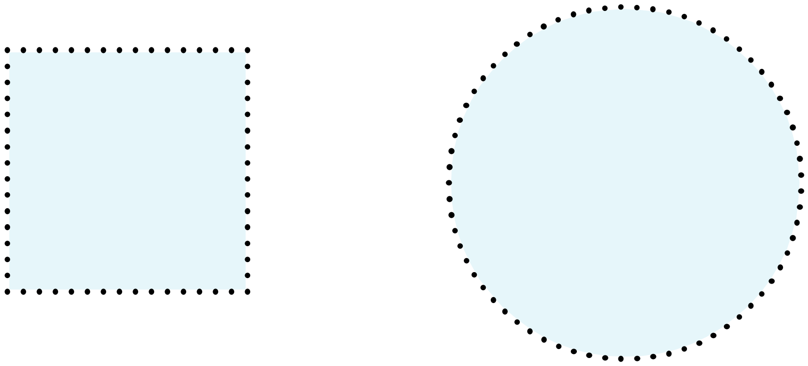

Fig. 1.1

ACTIVITY

Draw some shapes with dots and ask your friends about the names of those shapes. You will be surprised to know that though the figures are dots and have open surfaces, yet they are perceived as a whole.

Behavioristic perspective: This school of thought suggested that the study of Psychology should focus on observable behavior that can be observed and measured in a scientific manner. John B Watson was the first behaviorist.He proposed that one can gain an understanding of a behavior by studying and modifying the environment in which people operate. The processes involved in human learning are the basis of behaviorism. Learning by conditioning and reinforcement was studied by Skinner and Pavlov . You will know and study more about it in the chapter on Learning.

Psychodynamic perspective: Psychoanalysis was founded in Vienna, Austria by the psychiatrist Sigmund Freud. Freud elaborated on the theme of unconscious motivation. According to him, human behavior is a manifestation of the unconscious motives, needs and desires of which a person is not aware. Freud's contribution in areas of hypnosis and dream interpretation is of interest to many researchers.

Humanistic perspective: The humanistic perspective emphasizes on the person's sense of self. A person needs to enhance the understanding of self in order to achieve his/ her ideal self. Carl Rogers and Abraham Maslow emphasized that the discrepancy between real self and ideal self can be reduced by understanding one's potential and striving towards self-actualization. These different approaches help us in understanding the development of study of Psychology.

Cognitive perspective: This perspective views human mind as an information processing system where the information, that we receive from the environment, is processed, transformed, stored and retrieved like in a computer. According to constructivists human mind is actively constructing itself through exploration into the physical and social world.

1.3 DEVELOPMENT OF PSYCHOLOGY IN INDIA

In the early twentieth century, Psychology was at a nascent stage. The Western influence was predominant due to the impact of Britishers on Indians. Most of the early Indian Psychologists were philosophers. The establishment of the first psychological laboratory in India at Calcutta in 1916, marked the beginning of Psychology as a discipline.

Narendra Nath Sen Gupta was a Harvard-educated Indian psychologist and philosopher. Sen Gupta was also the founder of the Indian Psychological Association, and the founding editor of the first official Psychology journal in India, the Indian Journal of Psychology. Indian Psychologists also started looking for Indian theories of cognition. In 1934, Jadunath Sinha wrote a book on Indian theories of perception and another one on Cognition. Many books have appeared in the field of Indian Psychology.

There is a Journal of Indian Psychology published from Andhra University. Andhra University also has an Institute of Yoga and Consciousness. Many attempts are being made to integrate ancient Indian Psychology with modern Western Psychology.

INTEXT QUESTIONS 1.3

1. Structuralism states_________ as an important method of knowing about a person.
   a. free association
   b. introspection
   c. hypnosis
   d. dream interpretation
2. The humanistic perspective emphasizes on a person's need to ....
   a. enhance the understanding of self.
   b. perceive objects as a whole.
   c. interpret one's dreams.
   d. able to learn through imitation.

1.4 PSYCHOLOGY AND OTHER DISCIPLINES

Psychology, as a scientific study of mental processes, behavior and experiences in different contexts, cannot be studied in isolation. Its subject matter is based on other disciplines too. In fact no discipline can be studied in isolation, as all disciplines are interrelated. It will be interesting to know that Psychology being both a pure Science as well as Social Science , is well connected with all the disciplines that are of interest to educationists today. Psychology shares its knowledge with Sociology, Zoology Biology, Medicine, Neurology, Philosophy, Economics ,Political Science, Law and Criminology, Computer Science, Architecture ,Engineering, Mass Communication, Literature, Performing Art and Music. All disciplines gain and share knowledge from

each other. They empower people to learn from others and better understand the world. The major disciplines linked to the field of Psychology can be studied below.

Sociology

Sociology is the study of how social, cultural and environmental factors influence a person. Factors related to group norms, leadership, attitudes, collective behaviour, sociocultural factors etc are interrelated. They help in developing and understanding of both Social Psychology and Sociology.

Economics

The study of Economics is more meaningful when human behaviour is understood. Understanding human wants (which may be infinite) , consumer behaviour,savings,allocating funds for causes etc helps an economist understand decision making behaviour.Psychologists too need to have an in-depth awareness about levels of incomes, population, infrastructural reforms,poverty,income disparities, planning and other economic concerns. The choices one makes helps an economist to predict consumer sentiments and economic growth. Therefore, micro level economic behaviour is studied through an understanding of Psychology. Behavioural economics is an emerging subject that deals with this.

Political Science

Study of Psychology helps in understanding leadership behaviour, exercise of powers, voting behaviour, political conflicts, human rights, gender equality, discrimination, stereotypes, conformity and exercise of powers by governments. The practices followed by democrats, socialist, capitalist, or even dictators can be understood from a psychological perspective.

Philosophy

Psychology was born of Philosophy and the major concern of Philosophy was to know the nature of the human mind and how do humans behave in a particular manner. Until the end of 19th century Edward Titchener and other structuralists used experimental and observational methods to understand the various domains of human nature. Psychology, thus evolved as a discipline.

Medicine

Both Psychology and Medicine use scientific methods to understand human body, mind and behaviour. The mind and the body are inseparable for diagnosis, treatment and healthy healing. Most medical practitioners are aware about this aspect Thus, a

successful doctor takes assistance from clinical and counselling psychologist in treating patients suffering from chronic diseases like anxiety disorders, heart ailments, AIDS, cancer, paralysis etc. Therefore, the two disciplines are needed to function in harmony with each other.

Law and Criminology: Law seeks to regulate human behaviour , while Psychology seeks to understand human behaviour in a particular context. Knowledge of Psychology is applied to legal studies and studies of criminal behaviour. Psychology helps the legal professionals to develop an understanding of the social and cognitive principles such as eyewitness memory, jury bias, constructive memory, decision-making, trials, investigations, ethical codes and human rights, interviewing skills, punishment, parole, rehabilitation etc

Computer Science: Development in the field of Computer Science has aided in enhancing the knowledge of Psychology and its application. Similarly, the study of Psychology has been imperative in developing Computer softwares, HCIE (Human Computer Interaction Engineering) and AI (artificial intelligence). Computer engineers rely on research in Psychology and use research methods developed by psychologists in developing computer programs that mimic the human mind. Thereby enhancing the understanding of cognitive sciences.

Engineering and Architecture: Engineers are meant to design and develop products for use by human beings. Understanding human cognition and emotions helps them in being able to make the products user friendly. Architects too understand spaces from a psychologist's perspective. The connect between architects and engineers with human beings enhances the technological effectiveness of the design and its practical utility. Thus, designing and planning cities, roads, railway stations, malls, airports etc are done keeping in mind the behavior of people utilizing these facilities.

Music, Fine Arts, Dance and other Performing Arts: Psychologists aim at understanding and improving the behavior and performance of an individual. Studies have revealed that music and ragas heal the mind. The rhythms in music have a calming impact on human beings. Fine arts, drawing and painting and performing arts help a person vent out negative feeling. The person is able to identify his potential and live a more fulfilling life. Dance and Theatre is therapeutic and is widely used by psychologists. It enables a person to develop an understanding of onself.

INTEXT QUESTIONS 1.4

Fill in the blank choosing the correct option.

1. Edward Titchener and others structuralists used ....and observational methods to understand the various domains of human nature.
    a. Case study
    b. Interview
    c. Questionnaire
    d. Experimental

2. A successful doctor takes assistance from in treating patients suffering from chronic psychological disorders.
    a. Clinical and counselling psychologist
    b. Organizational psychologist
    c. Forensic psychologist
    d. Educational psychologist

ACTIVITY

Talk to experts from any two disciplines. Compare and enlist their areas of study. Find the human influence and relationship of the enlisted components with Psychology.

1.5 APPLICATION OF PSYCHOLOGY

The theories developed from ardent research in Psychology are applied and utilised in day to day life situations and circumstances. The study of Psychology is helpful in knowing and understanding a vast array of human thoughts, emotions and behaviours. In the practical situations these theories blend with the requirements of everyday living. Study of Psychology can prepare one for developing an understanding of human beings in different areas and professions. Over the years, as this scientific study of Psychology has grown, it has given rise to various subfields where people work. The following are some of the areas where psychologists work.

Clinical Psychology

Clinical Psychology deals with the causes, diagnosis and treatment of psychological disorders. Clinical psychologists use standardized tests as an aid to diagnose these

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disorders. Unlike psychiatrists they do not have medical degree and cannot prescribe medicines to treat the disorders. They have a degree in Psychology and are trained to provide psychotherapy which involves helping clients learn to make choices, so that they can cope with troublesome thoughts ,feelings and behaviours. The aim of Psychotherapy is to alleviate the client's distress.

Counselling Psychology

Counselling psychologist helps people deal with issues that they face ,such as choosing a career, marriage, raising a family, performing at work etc. These problems do not involve psychological disorders. They provide vocational testing to help people decide which occupation best suits their abilities and interests. They deal with people who have milder emotional and personal problems. They sometimes provide psychotherapy but may have a more limited knowledge of therapeutic techniques than clinical psychologists.

Educational and School Psychology

Educational psychologists study all aspects of the educational process. They apply principles of learning, perception and motivation to the curriculum to deal more effectively with the learning situations. Thus, much of the work of educational psychologists is devoted in areas of curriculum planning, teacher training and instruction design. They plan and devise a curriculum that is based on the student's abilities and needs. Moreover, this suggested curriculum and teaching methodology is inclusive, student friendly and helps in generating interest of the students. Educational Psychology may include School Psychology where Psychologists work with educators, and sometimes families of students, devising ways to improve the cognitive, emotional and social development of children at school. They are devoted to counselling children, in elementary and secondary schools, who have academic, emotional or behavioural problems.

Developmental Psychology

Developmental psychologist examines how people grow and change from the moment of conception (through) till death. The developmental changes take place in physical, motor, cognitive, emotional, behavioral, social, and linguistic domains through the lifespan. These changes are of interest to the Developmental Psychologists. They suggest strategies through counselling to alleviate problems at any developmental stage. They research and teach the development of mental processes and behaviour as per the individual's (with) age and experience.

Social Psychology

The presence of other people, with whom we may or may not interact with, affect us

Notes

significantly. Social Psychology studies all aspects of social behaviour and social thought. How and what we think when we interact with others determines one's adjustment patterns, self-esteem and self worth .It is the study of how people's thoughts, feelings and actions are influenced by others. Social psychologists deal with topics such as interpersonal processes, aggression, intergroup conflict, attitudes, stereotypes, prejudice and discrimination, self-concept, social cognition, social influence, group processes, polarisation etc

Industrial /Organisational Psychology

Industrial/Organisational Psychology is concerned with the Psychology of the workplace. Various intelligence and aptitude tests are used by companies in their hiring and placement programs. All aspects of work settings like leadership, communication within the organisation, supervision of personnel, productivity, interpersonal and intergroup relations, cause of industrial strife, counselling employees , allocating work, managing team morale, goal setting , motivational and emotional concerns, job design etc are assisted by organisational psychologists at work place. In order to improve the conditions of work setting and enhancing the quality of work ,various interventions for organisational development take place.

Community Psychology

Community psychologists help the community and the institutions in alleviating problems related to physical and mental health as well as community problems like lack of employment, social discrimination , participation in group decisions, health promotion, child rearing practices, encouraging positive interactions, and participation in community programs. They reach out to the community to help through various rehabilitation programs like care of elderly, support to the physically or mentally challenged, or even for de addiction programs .They help all those affected because of their sufferings , and may have lost hope.

Environmental Psychology

Environmental psychologists consider the relationship between people and their physical environment. The physical factors like land, vegetation, climate, crowding, pollution, humidity, natural disasters etc. play an imperative role in a person's day to day functioning. Perceiving the environment as respectful, helps in establishing positive attitude towards the environment. This prevents any further exploitation of the same. Thus, the conditions of living and work improve with the rational and sustainable use of environmental products.

ACTIVITY

Find any two professionals and interview them to know (of) their (psychological) viewpoint, related to use of Psychology in their professions. Enlist your findings.

ACTIVITY 1.5

1. The ecological consequences of human actions can best be known by …………...

   a. Counselling Psychologist

   b. Clinical Psychologist

   c. Social Psychologist

   d. Environmental Psychologist

2. ………… are able to help alleviate the ill effects of substance use and abuse. They also help in rehabilitation after de addiction programs.

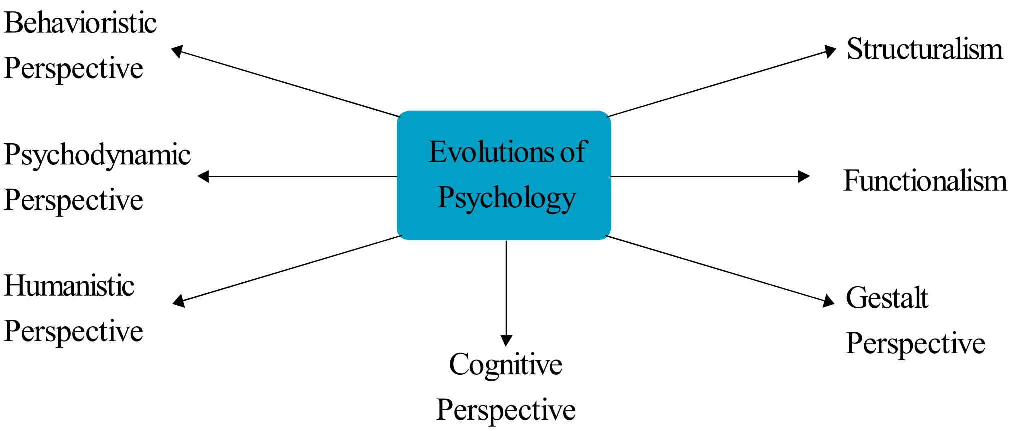
   a. Social Psychologist

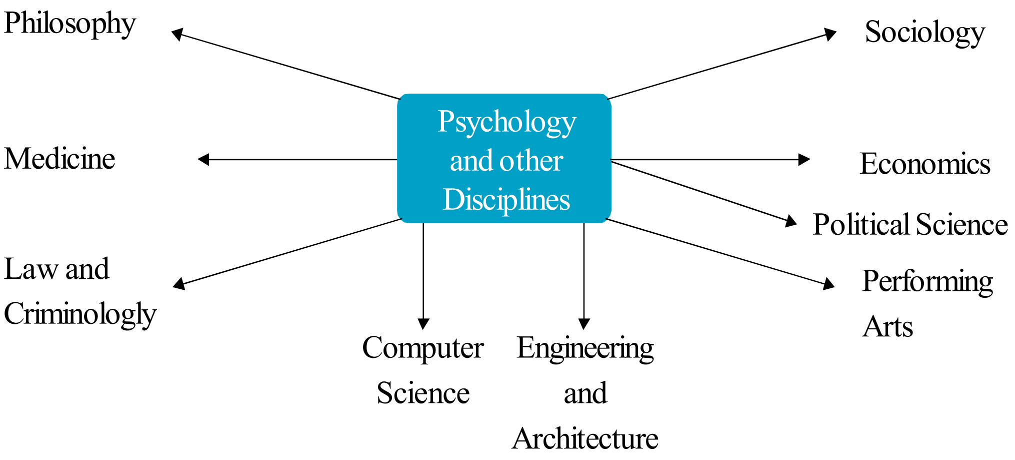
   b. Developmental Psychologist

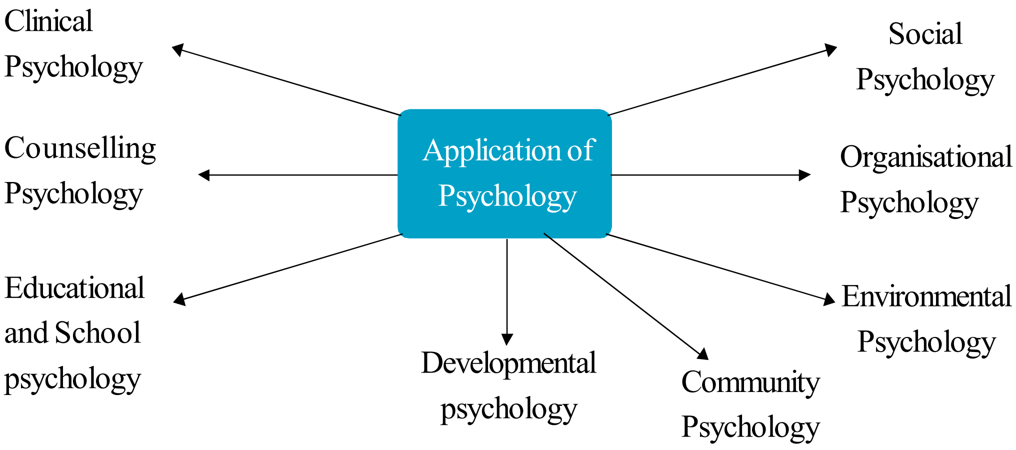
   c. Community Psychologist

   d. School Psychologist

WHAT YOU HAVE LEARNT







TERMINAL EXERCISE

1. What is the nature of Psychology as a discipline?
2. Is Psychology a Natural Science or a Social Science? State reasons for your answer.
3. How is the behavioural perspective different from the structuralist and functionalist viewpoints.
4. 'In India attempts are being made to integrate ancient Indian Psychology with modern Western Psychology'.Explain the statement with reference to development of Psychology in India.
5. Explain the evolution of Psychology from the late nineteenth century to the modern time.
6. How does Music ,Fine Arts, Dance and other Performing Arts influence our behaviour and cognition?

7. 'The subject matter of Psychology is based on other disciplines and vice versa'. With reference to this statement, explain the relationship between the following.

   a. Psychology and Engineering b.Psychology and Computer Science

8. Enumerate the relevance of Psychology in various other disciplines that you study.

9. Explain the role that Psychologists play in hospitals and organizations.

10. What is the area of work of educational and school psychology?

ANSWERS TO INTEXT QUESTIONS

1.1

1. d. All of the above
2. b. Human cognition

1.2

1. a. is based on empirical, verifiable data
2. c. it studies human beings in the social and cultural context, where it is difficult to gather data.

1.3

1. b. introspection
2. a. enhance the understanding of self.

1.4

1. d. Experimental
2. a. Clinical and counselling psychologist

1.5

1. d. Environmental Psychologist
2. c. Community Psychologist

2

BASES OF HUMAN BEHAVIOUR

While ironing her clothes, Zoya accidentally touches the hot iron surface and instantly pulls her hand back. Aman closes his eyes the moment his sister flashes a torch on his face. Both these responses (withdrawal of hand and shutting of eyes) occur in less than a second's time. These fast reactions indicate a special kind of functioning of the body, known as autonomic responses, carried out by the brain. Our behavior and actions are controlled by different parts of the brain.

The previous chapter talks about the basics of Psychology, the study of behavior. The behavior a person exhibits requires flow of information in the body which is carried out by neurons. In this chapter, we will elaborate on 'neurons 'and other biological bases of behavior facilitated by the nervous and endocrine systems. We will also look into how socio-cultural and ecological factors affect the development of an individual.

LEARNING OUTCOMES

After studying this lesson, learner :

- describes the structure and function of neuron and nervous system;
- explains the role of heredity and environment on human behavior; and
- elaborates the socio-cultural and ecological factors underlying human behavior.

2.1 STRUCTURE AND FUNCTION OF NEURON

Neuron is the most basic unit of the brain. The human brain is estimated to contain at least 150 billion **neurons**, also known as nerve cells. Each of these neurons is connected

to many other neurons, making uncountable connections. These connections between neurons are called **synapses**. A neuron is a specialized cell in the nervous system that receives and sends messages within the system. Neurons act as messengers of the body and possess a very special structure.

Neurons come in many shapes and sizes, yet there are certain common features. The part of neuron that receives messages from other cells is called **dendrites** (branches). The dendrites are attached to **soma** (cell body) that contains the nucleus and keeps the entire cell alive and functional. As we move further, follows **axon**, a fiber like structure attached to the soma whose job is to carry messages to the other cells (to other neurons, muscles or glands).

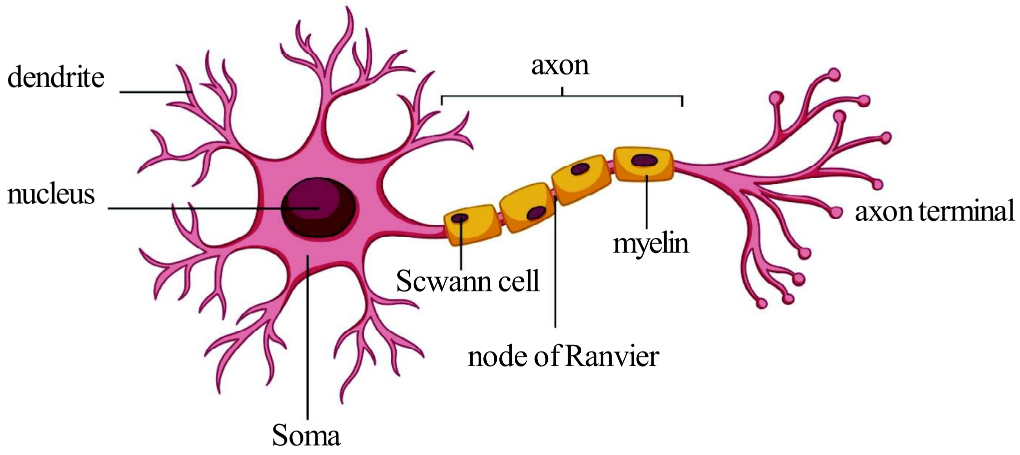


Figure 2.1: Neuron Anatomy

Neurons make up only 10% of the cells in the brain. The other 90% of the brain is composed of glial cells. **Glial cells** serve as a sort of structure on which the neurons develop and work, and also work as nutrients and oxygen supplier to the neurons. They hold the neurons in place. A special type of glial cells called **Schwann Cells** produce **myelin** to coat axons and clean up waste products and dead neurons. The axons may or may not have myelin sheath. Even when it is there, it is interrupted at the Nodes of Ranvier. A neuron which has the myelin sheath conducts the message faster than the neuron which is not covered by myelin sheath. Bundles of myelin-coated axons travel together in cable like structures called neurons. Axons of neurons found in the body are also coated with a thin membrane called **Schwann's Membrane**. They serve as a tunnel through which damaged nerve fibers can repair themselves. Unfortunately, axons of the neurons in brain and spinal cord do not usually have this coating and are therefore more likely to be damaged on a permanent basis.

2.1.1 Types of Neurons

Based upon the number of processes that extend directly from the cell body, neurons are divided into three categories-

- Nerves conducting excitation from the sense organs of the skin to the brain and spinal cord, i.e., sensory nerves are comprised of **Unipolar Neurons**.
- The **Bipolar** (two processes) **Neuron** has a single axon and a single dendrite. It is believed to be the primitive type.
- A **Multipolar** (many processes) **Neuron** has several short dendrites and a single axon and is therefore connected to many neurons.

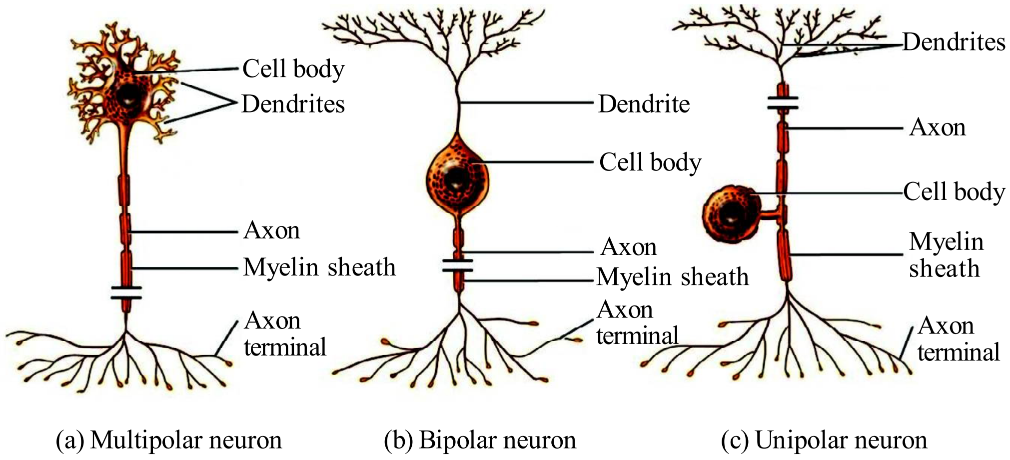


Figure 2.2: Types of Neurons

2.1.2 Functions of the Neurons

Neurons function on the basis of "**All or None**" law. Depending upon the stimulus intensity, i.e., if it reaches a critical value it will fire with total strength, if below, then there will be no excitation. So, nerve impulses are electrical events of very short duration that move along the axon. During this transaction, when the neuron is not conducting any impulse i.e. resting, the inside of the membrane has a negative electrical charge. When the cell membrane is excited by the stimulus, the cell becomes little less negative from the inside. As the stimulus reaches a threshold level, the membrane changes its characteristics- certain channels open to allow sodium from outside to enter the cell.

Notes

Since sodium ions are positively charged, the inside of the cell becomes momentarily positive (for a millisecond). This results in nerve impulse.

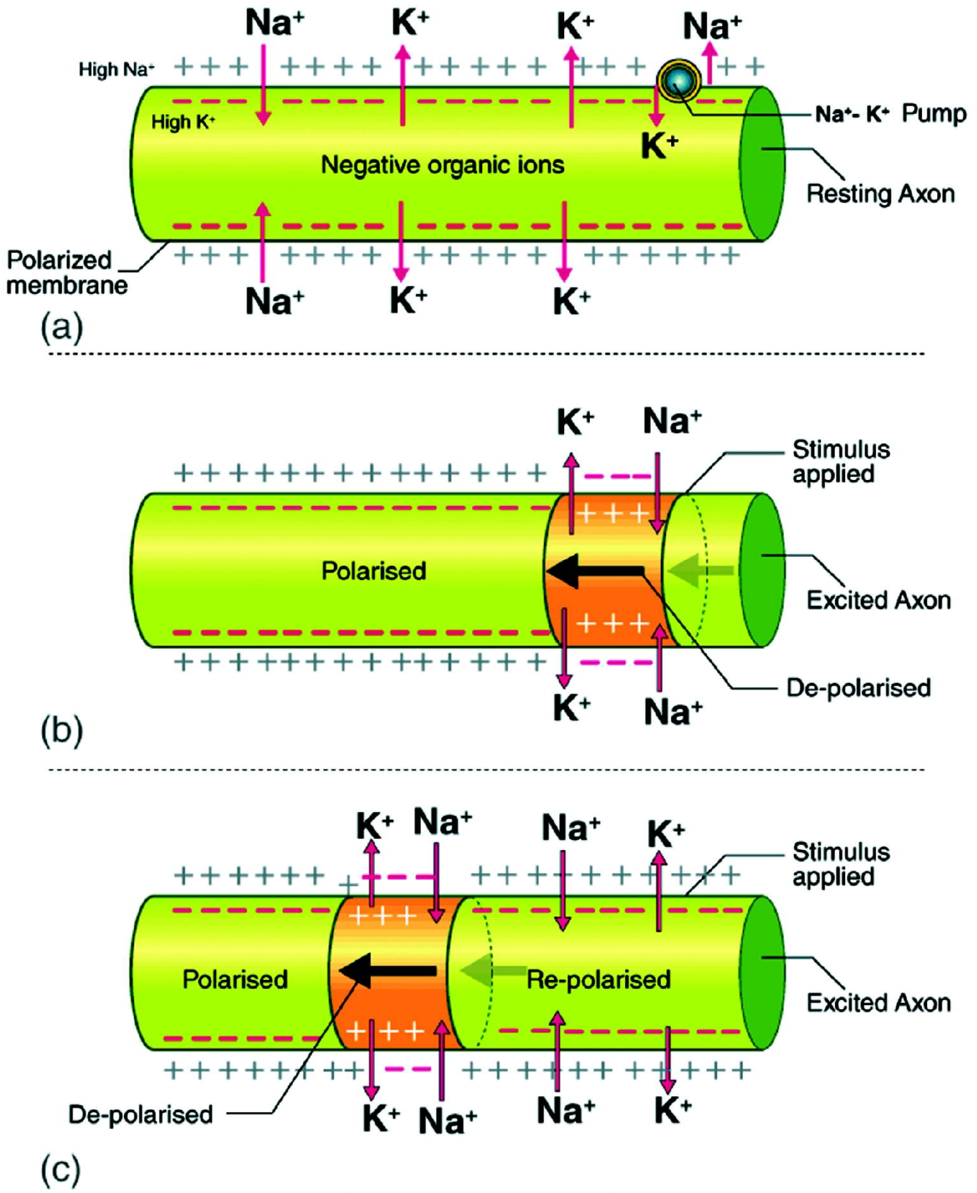


Figure 2.3: Nerve Impulse

After a millisecond, to restore the potential, potassium ions move out to neutralize charges (sodium-potassium pump). In an axon, the active portion triggers a spike (nerve impulse) in the next region and so on down the axon. Once the potential has been restored at the point of initial activity, it becomes ready to carry another impulse from a subsequent stimulation. The tip of the axon makes a functional connection (though never connected physically) with the dendrites/cell bodies of the following neurons, called Synapse. The gap between the axon terminal and dendrite is known as

the **Synaptic Cleft**. There are small packets (vesicles) at the terminal position of the axon that contain neurotransmitters. Neurotransmitters can either excite or inhibit transmission of impulse in the receiving cell.

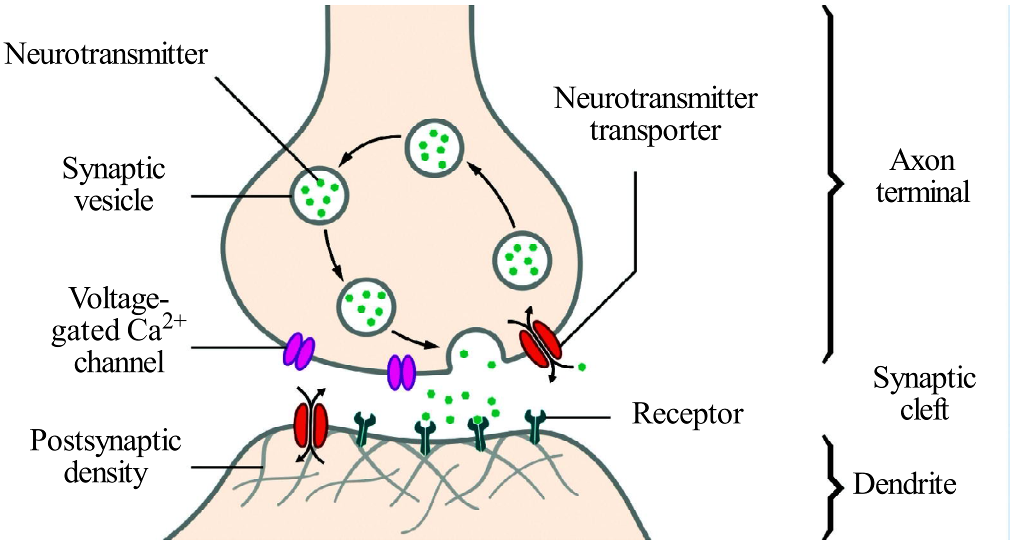


Figure 2.4: Nerve Impulse at Synapse

INTEXT QUESTIONS 2.1

Match the following.

1.	Smallest unit of nervous system	A.	Dendrite
2.	Receives messages from other neurons	B.	Myelin Sheath
3.	Structure on which neurons develop & works	C.	Bipolar
4.	Helps in conduction of message	D.	Neuron
5.	A type of neuron	E.	Glial Cells

2.2 ROLE OF NERVOUS SYSTEM AND ENDOCRINE SYSTEM IN HUMAN BEHAVIOUR

Signals from the nervous system and hormonal release from the endocrine system are the internal sources for the behaviour, undertaken as action or reaction. Before moving on to endocrine system, let us understand the categorization of nervous system and its functions. Nervous system can be understood in a simple manner by categorizing it on the basis of its location and function. On the basis of location, the nervous system can be branched into:-

a. **Central Nervous System (CNS)**

Central Nervous System (CNS) comprises of brain and spinal cord which lie within the bony cases of skull and spine, and

b. **Peripheral Nervous System (PNS).**

PNS is parts of the nervous system outside the skull and spine- comprising of autonomic and somatic nervous system.

a. **Central Nervous System:** It is comprised of brain that continues as the spinal cord in the form of long stalk. Brain integrates the inputs from the sensory organs, analyzes it (cognitive appraisal) and carries out the motor activities as per the requirement. However, brain would be useless without the functioning of the spinal cord.

2.2.1 The Spinal Cord:

A bony case known as the spinal column encases the spinal cord. There are 31 segments of the spinal cord. The nerves that follow the dorsal pathway contain the sensory fibers, and the ones that follow the ventral pathway contain the motor fibers.

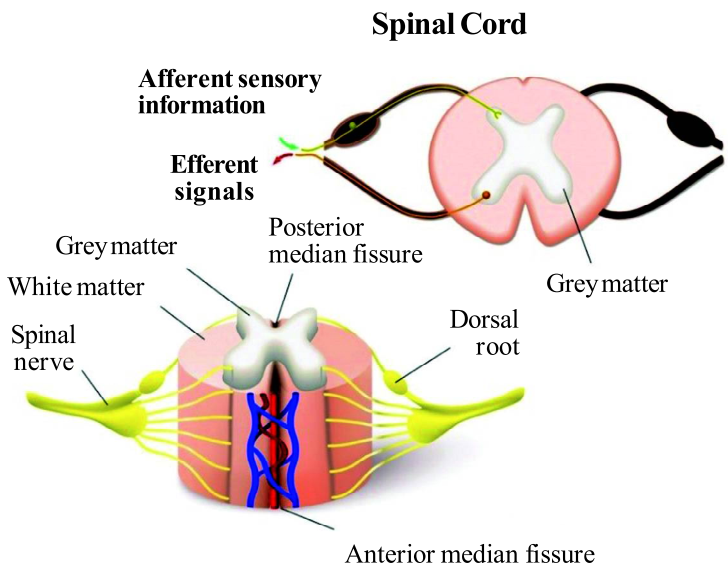


Figure 2.5: Cross-Section of Spinal Cord and its Functions

The cross-sectional image of the spinal cord appears like a butterfly. The central part,

which is majorly comprised of neuron's cell bodies appears grey, and hence popularly known as the grey matter. The outer part, mainly composed of axons and nerves, looks white. The outer section is responsible for carrying to and fro information from the brain to various parts of the body (message pipeline). The other major function taken care by the spinal cord is the **reflex action** (example knee jerk, reaction on touching hot and eye blinking). The three types of neurons involved in the process are sensory (afferent- carry messages from senses to the spinal cord) neurons, motor neurons (efferent- from spinal cord to muscles and glands) and interneurons that link the sensory and motor neurons and form the inside of the spinal cord and the brain itself.

2.2.2 The Brain:

The spinal cord progresses in the upward direction into brain stem, near the junction of the skull that encapsulates the brain. For a better understanding, brain can be categorized on the basis of the major functions it carries out, i.e.,

(i) Survival

(ii) Motivation and emotion, and

(iii) Higher mental processing.

Anatomy of the Brain

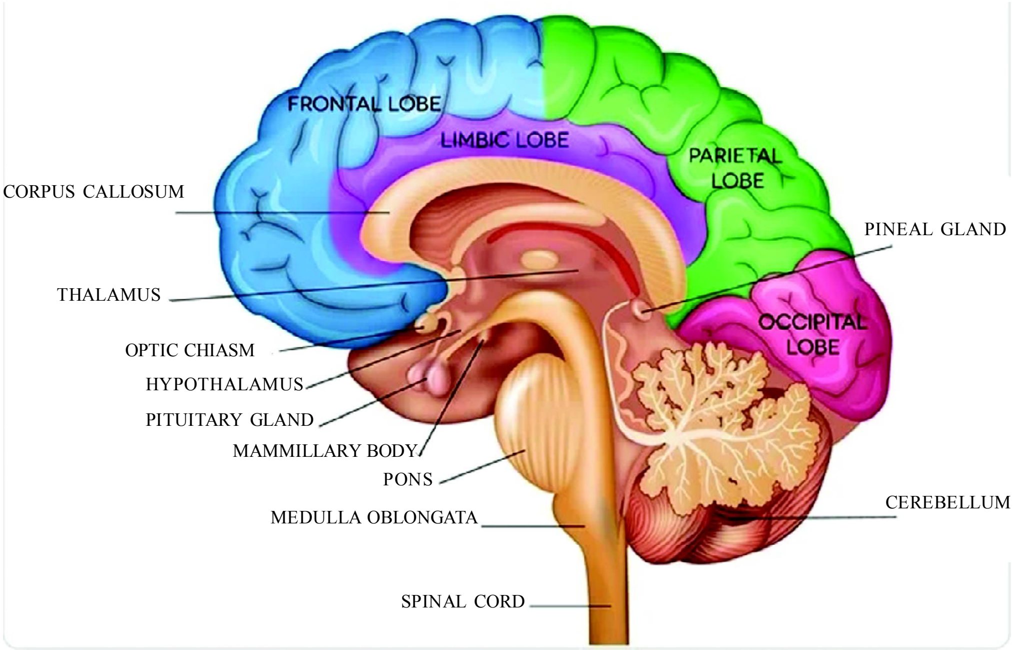


Figure 2.6: Brain

(i) **Survival Function**: It is carried out by the brain stem. Brain stem covers medulla, pons, cerebellum, and reticular activating system (popularly known as Midbrain). Medulla and pons are placed above the spinal cord. **Medulla** is found to be responsible for heartrate and breathing. **Pons** facilitates the passing of sensory and motor information and they are responsible for sleep-arousal, muscle tone and cardiac reflexes. The **cerebellum** lies at the back of the brain stem. It transmits the information to the higher parts of the brain and controls the movements. **Reticular Activating System** activates/arouses central cortex and is involved in sleep-arousal, regulation of muscle tone and cardiac reflexes.

(ii) **Motivation & Emotion**: Motivational behaviours like eating and aggression are controlled by a small structure that lies in the deep layers of the brain i.e., Hypothalamus. **Hypothalamus** also plays role in controlling autonomic nervous system. Quite near the hypothalamus, around the center of the brain also lies thalamus. **Thalamus** receives sensory inputs from various parts of the nervous system and transmits the information to the cerebral hemispheres and other parts of the brain. Emotional reactions and behaviours are regulated by the **limbic system** that comprises of a set of small structures found in deep layers of brain. Largest among these structures is **Hippocampus** which is responsible for making memories. **Amygdala**, which is near hippocampus, is responsible to people's reactions to dangerous situations. It controls fear responses and memory of fear.

(iii) **Higher Mental Processes**: Abilities like reasoning, planning, remembering, and imagining are taken care by **cerebral cortex**. It covers the entire surface of the brain. Although, the structure of the two hemispheres that comprise cortex seem identical, but functionally the two are responsible for different functions. The left hemisphere is predominantly responsible for language aspects, and right hemisphere takes edge in image formation, spatial relationships and pattern recognition. The two hemispheres are interconnected with myelinated fibers, Corpus Callosum, for transmitting and receiving information. On the basis of functionality, cerebral cortex is divided into four lobes- Frontal, Parietal, Temporal, and Occipital. As the name suggests, **frontal lobe** lies in front of the central fissure, and is responsible for cognitive functioning, like attention, thinking, memory, learning and reasoning, and is also responsible for inhibitory effects on autonomic and emotional responses. **Parietal lobe** is placed behind the central fissure. It is responsible for processing information from skin and internal body receptors for touch, temperature and body positioning. The **temporal lobe** is placed behind the temples. The main function this lobe is responsible for is

hearing. It is also responsible for memory of symbolic sounds, understanding of speech and written language. **Occipital lobe** is placed at the base of the cortex, towards the back of brain. It is responsible for the visual information from eyes, in the form of visual impulses, and memory for visual stimuli.

The functional division that is explained above gives us an understanding of brain and its functions. Nothing works in isolation to each other; it is just that an area predominates over others in carrying out the routine functioning in everyday life. Example when we say that we are going to watch a movie, the visual system gets activated which is a predominant role of occipital lobe, the dialogues and music, are interpreted through temporal lobe, the comfort level of the seats are experienced through parietal lobe, and the relation we are able to make between various scenes is through frontal lobe. The emotions we experience while watching the move are controlled by the hypothalamus, thalamus and limbic system. The point is to emphasize that nothing happens in isolation; all the functions in the brain are interlinked and well-coordinated, with its subsystem performing their key roles.

(b) **Peripheral Nervous System (PNS):** PNS consists of the nerve fibers or axons which:

1) carry nerve inputs from the sensory receptors to the body, inward to the CNS;

2) carry nerve impulses for the movement of muscles and the excitation of certain glands outward from the CNS. It comprises of Somatic Nervous System (SNS) and Autonomic Nervous System (ANS). SNS takes charge of activating the striped muscles (example arms and legs) through motor fibers and carry information from the sensing organs (ear, nose, touch receptors of the skin) through sensory fibers. All the involuntary muscles, organs and glands are controlled by Autonomic Nervous System (ANS). Here, motor fibers activate smooth muscles (bodily organs) as the stomach, activate secretion from certain glands like the salivary glands and regulate activities in certain type of muscles of heart. Sensory fibers under ANS carry information from the internal organs that is perceived as pain, warmth, cold or pressure.

(c) **Autonomic Nervous System (ANS)**: It is further categorized as **Sympathetic** and **Parasympathetic Nervous System**. Let's look into an example, Prateek, while going for interview, notices certain changes in his body- his heartbeat increases, his breathing becomes fast, he starts sweating and his mouth becomes

dry. After the interview gets over, no matter how good or bad it was, his breathing becomes normal, heartbeat lowers, the dryness in his mouth goes away and he stops sweating. Now, what Prateek experiences is something we all have experienced at some point of time or the other. These changes are controlled by the sympathetic and parasympathetic part of ANS and are involuntary in nature. The sympathetic division of the ANS is primarily located on the middle of the spinal column. Commonly, it is known as the **"fight or freezing" system**, as it helps people to deal with the stressful events in their lives. During its activation, pupils' dilate, heart rate increases, and digestion of food and excretion of waste tends to be inhibited. The parasympathetic division (PSD) is known as the **"eat-drink- & rest" system.** The neurons responsible for its activation are placed at the top and the bottom of the spinal column, on the other side of the sympathetic division neurons. PSD helps the body to restore the normal functioning after a stressful situation ends. It slows the heart rate and breathing, constricts the pupils, and reactivates digestion and excretory functions of the body.

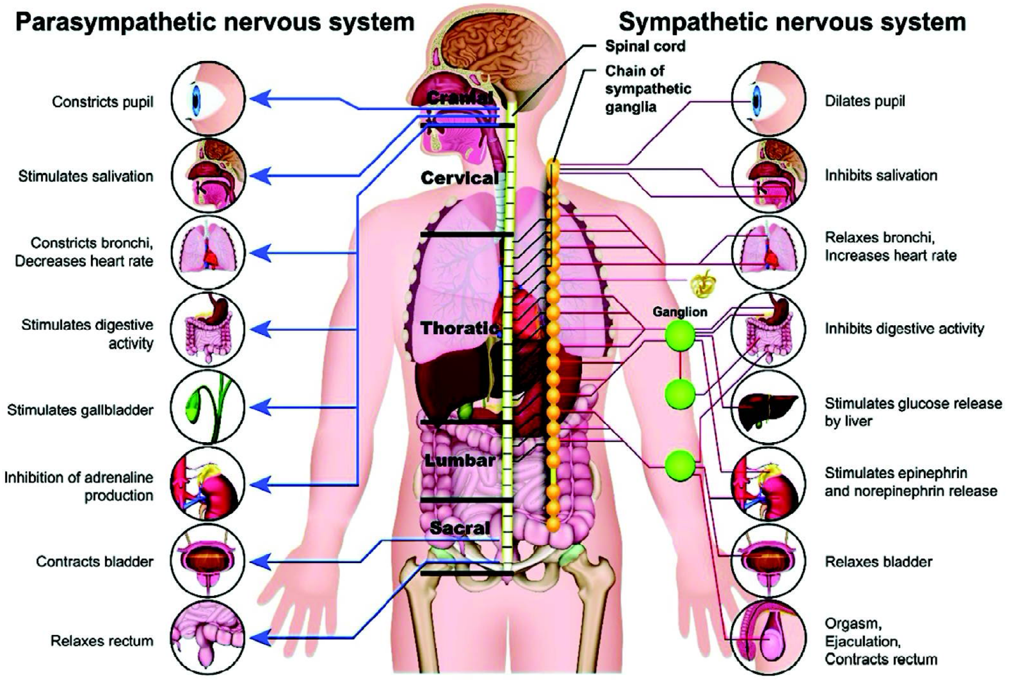


Figure 2.7: Sympathetic & Parasympathetic NS

INTEXT QUESTIONS 2.2

One Word Answers

1. Name the part of the neuron that receives messages from adjacent cells.
2. The neurons of the motor pathway control ________.
3. Name the cell which is responsible for the reproduction of other cells of the body.
4. Damage to which brain part may lead to difficulty in heart rate and breathing.
5. Damage of which part of brain may lead to difficulty in forming new memories.

2.3 THE ENDOCRINE GLANDS

The nervous system also controls the endocrine glands and their secretion of hormones into the bloodstream. The functioning of nervous system and endocrine system (endocrine glands) is together known as Neuro-endocrine System.

Endocrine glands are different from other glands (sweat or salivary glands) as they are ductless glands. Unlike other glands, they do not secrete directly into the tissues, rather they secrete into the bloodstream to have their impact on the desired organ. The secretion that is released from the endocrine glands is known as Hormones. These hormones, when correctly fit in the receptor organs, help in bringing out the desired behaviour. These hormones have been found to be responsible for the functioning of the heart, pancreas, and sex organs. They are also found to influence our emotional reactions and excitatory or inhibitory effects of brain activity. There are different types of endocrine glands which are as follows-

Pituitary: It is located in the brain and is also known as the 'master gland' because it influences other hormones secreting glands. It releases hormones responsible for human growth.

Pineal: It is placed near the base of cerebrum and regulates sleep-wake cycle through the release of melatonin hormone.

Thyroid: It is found in the neck region and releases thyroxine that regulates the metabolism rate of the body.

Pancreas: It is found in the abdomen region and releases insulin that controls the level of blood sugar in the body.

Gonads: They are also known as sex glands, ovaries in females and testes in males. They control sexual behavior and reproduction.

Adrenal: The adrenal glands are placed just above each kidney. They are divided in two sections- adrenal medulla and adrenal cortex. Adrenal medulla controls the secretion of epinephrine and norepinephrine that in turn regulates sympathetic arousal (helps people during stress). The adrenal cortex releases 30 different types of hormones, called corticoids. These hormones control physical stress (of illness, surgery, temperature), psychological stress (emotional aspects), salt intake and functioning of nervous system.

For the overall functioning of the body, regulated release of various hormones is important. They are responsible for the optimal functioning of various parts of the body, including the nervous system. They also control our reactions to external environment.

INTEXT QUESTIONS 2.3

Fill with suitable answers

1. Endocrine glands release ______ in blood stream.
2. Pineal gland is placed near the base of ______.
3. ______ are male gonads.
4. Insulin is secreted in blood stream by ______.
5. Metabolism is controlled by ______.

2.4 THE ROLE OF HEREDITY AND ENVIRONMENT IN HUMAN BEHAVIOUR

When a child is born in the family, you must have observed that the family members say that the child's nose is exactly like her father's, her eyes look like her mother's, and so on. Every child inherits equal number of chromosomes from both mother and father. The combination is so unique that apart from identical twins, all children born to same set of parents have their unique genetic makeup. In this backdrop, one can understand genetics as the study of inheritance of physical and psychological makeup among offspring from their parents (ancestors in the larger domain). For example, hair color of the child is usually genetically determined; and certain psychological factors like emotional expression are also influenced by parental behavior.

The genes are found in the chromosomes, which are present in the nucleus of the zygote, the beginning stage of the new life. Zygote has 23 pairs of chromosomes, 23 contributed by mother and father equally. The 23rd pair of chromosome determines the sex of the child.

Genes: Chromosomes contain tiny little structures called genes. They are the codes or commands that are responsible for the physical and psychological development of the offspring. These genes are the carriers, responsible for the similarity among parents, their ancestors and the offspring, i.e. the basic unit of heredity. The genes do not work within their own system. They take information from the environment, adapt according to the changes required for the betterment of the individual (Darwin's theory of survival of the fittest).

Nature Vs. Nurture

Is a child's development and behavior governed by his/her unique genetic makeup or the environment s/he lives in? Well, the answer to this question is an ongoing debate with no certain conclusions. For example, Sharon displays aggressive behavior. So, does she exhibit this behavior because her mother is aggressive and so she has inherited aggression from her mother (nature), or she learned that kind of behavior from her mother through observation and interaction (nurture). Like it is mentioned earlier, it is difficult to answer this question.

It would be better to say that nature and nurture both play an important role in a child's development. We inherit some features, while others are what we develop over time as a result of interacting with our environment.

In short, heredity and environment interplay determine our physical and psychological makeup. Psychologists usually undertake studies on twins (identical and fraternal twins) to understand the role of heredity and environment.

2.5 THE SOCIO-CULTURAL AND ECOLOGICAL FACTORS UNDERLYING HUMAN BEHAVIOR.

The behavior of an individual does not occur in isolation; it is determined by both genetics and environment. The term environment is encompassing of physical, psychological, and socio-cultural environment. Example the food intake behavior of humans is to satisfy the biological need of hunger. But unless and until we are hungry, are we ready to eat when food is provided to us? The answer for most of us is 'No'. We have our individual food preferences, based on our taste, choice, mood, and availability in time and situation, i.e. it is guided by our psychological, socio-cultural

upbringing and the ecological environment that we are part of. The important role environment plays in a child's development process can be understood by the **Ecological Systems Theory** given by **Urie Bronfenbrenner**, and so popularly known as **Bronfenbrenner's Bioecological Model**.

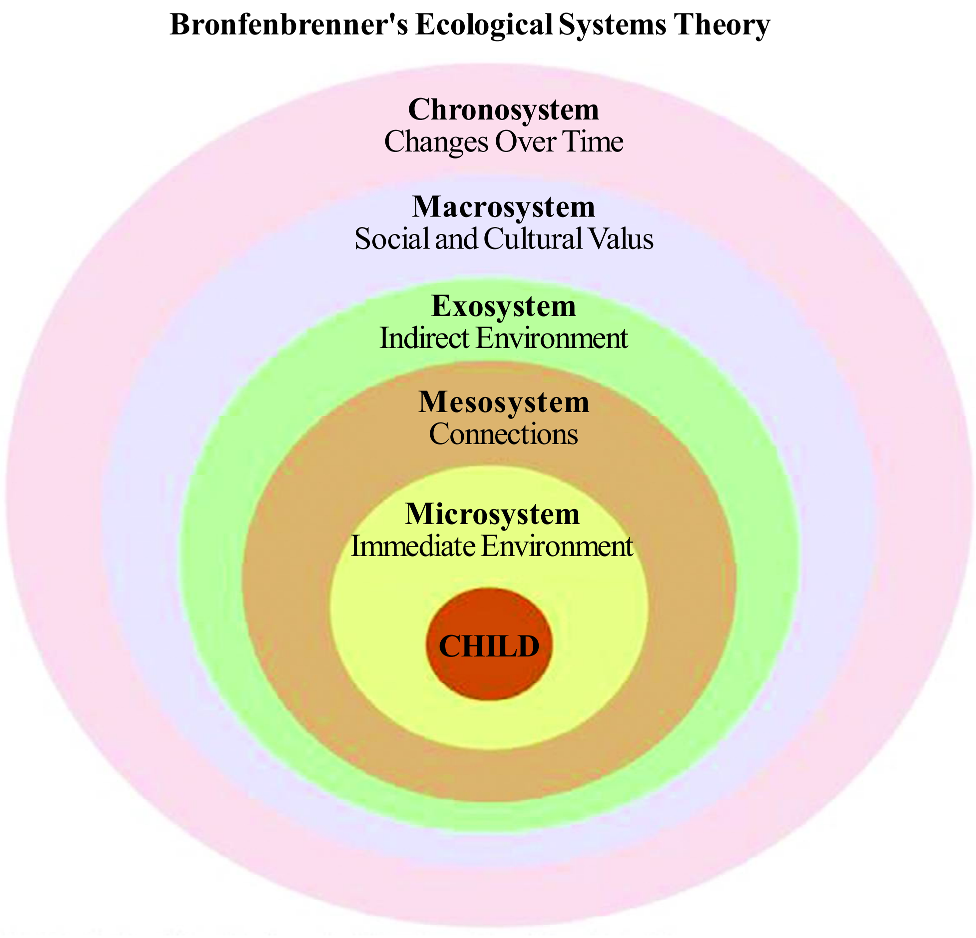


Figure 2.8: Bronfenbrenner's Model

The Bronfenbrenner's model focuses on interconnection between the individual and the environment at various levels. The model has five systems or levels at which this interconnection can be understood.

i. **Microsystem**- The environment that a child comes in immediate contact with and lives in is the microsystem, like the family, school and peers. It also encompasses the various ways in which the parents, siblings, teachers, friends etc. interact with the child. The more supportive these interactive patterns are the better is the development of the child.

ii. **Mesosystem**- This level talks about the relationship between the various components of the microsystem, i.e. how do the parents interact with the teachers, what connection is there between the parents and peers of the individual, etc. Such experiences affect the kind of relationship the individual has with others. For example, during parent-teacher meetings, if parents use supportive and positive words for the child instead of complaining about him/her, the child's confidence boosts up and s/he learns to talk positively about others in a social setting.

iii. **Exosystem**- The environmental factors that have an indirect effect on the development of individual, like workplace of parents. The child may not be interacting with these factors, but they do impact the developmental process of the child. For example, if the father doesn't get his idea approved in the office meeting, he might show his anger at home, which will in turn affect the child in a negative way.

iv. **Macrosystem**- It comprises of the culture in which an individual is brought up. The values, ideas and beliefs, all come under this system. Culture is the phenomenon which differs from society to society. For example, children brought up in Western culture will be more individualistic than the children from the collectivistic Eastern cultures of the world.

v. **Chronosystem**- It includes the changes in the environment of an individual that occur over time. It includes instances like transfer of either of the parent to a new place which might result in shifting among new people. Another example could be birth of a sibling. When a younger sibling is born, the entire pattern of interaction that the child had earlier, changes. If in such situations, the child is neglected due to change in the circumstances, the child might develop behaviours such as inferiority complex which are not good for his/her development.

2.6 MAJOR SOCIAL AGENTS THAT GUIDE HUMAN BEHAVIOR

As discussed in the Bronfenbrenner's Model, the role of various contributors that help in the socialization of the child cannot be denied. The way we perceive, attend, analyze and reciprocate to the external environment is affected by social agents like parents, siblings, peers, school, and media that are discussed below.

i. **Parents**: Parents are the first social contact that a child experience. Child's behavior is shaped by the regular parental interactions like talking, eating, guiding, rewarding certain behaviors and punishing other behaviors, level of control

exerted, etc. The way parents behave with each other, their interaction with the rest of the family members; various social groups etc. also affect the behavior of the child.

ii. **Siblings**: The influence that siblings have on each other cannot be overlooked. They are the ones that spend a lot of time together. Living with a brother or sister teaches a child various things like adjustment, sharing, respecting the other person's space, and dealing with conflicts. If a child shares a good relationship with his or her sibling, it helps in better growth of the child.

iii. **School**: Next social system a child comes in contact with is school. This is a child's first exposure to structured social system. It helps children learn rules and regulations, gives them platform to develop self-initiative and help in developing relations beyond parents in the form of teachers, peers, friends, etc. So, children start socializing with others who are different from family members.

iv. **Peers**: Within the school system and beyond, as the child grows, peers become a major influencing group. Being of same age, peers become most relatable social agents. They help a child in inculcating the habits of sharing, caring, mutual understanding, trust, etc. Children also learn to assert their viewpoint along their interaction with peers.

v. **Media**: As discussed earlier, culture is influenced by changing times. Media, which is a scientific development of the virtual world, has been identified as a significant contributing agent of socializing. The exposure to harmonious, violent, and funny content on television influences a growing child through imitation. The media (virtual world) has enabled children to grab information with the touch of a button. The information hence sought should be guided and monitored to prevent children from developing undesirable behaviour through this social agent.

In summary, human behavior is very complex which is largely determined by several factors such as heredity, environmental, social and cultural values.

INTEXT QUESTIONS 2.4

Fill in the blanks with suitable answers

1. At the beginning stage of the new life. Zygote has _______ pairs of chromosomes.

2. ___________ and __________ interplay determines our physical and

psychological makeup.

3. The Bronfenbrenner's model focuses on interconnection between the __________ and the environment at various levels.

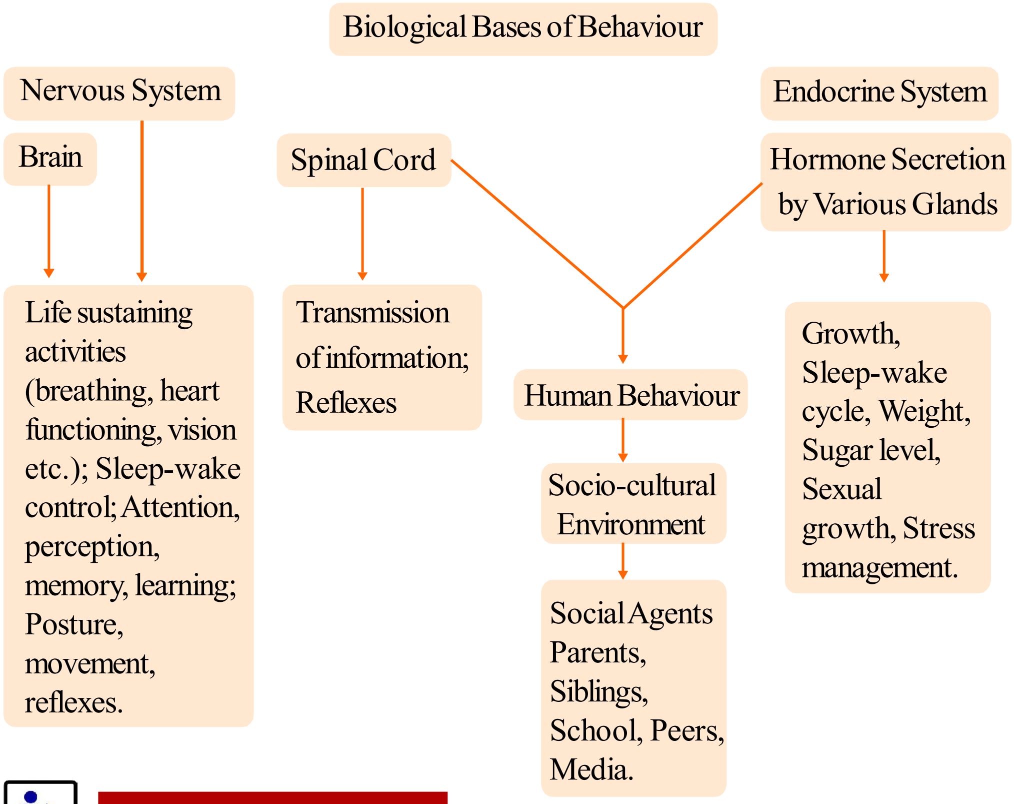
State whether these statements are True or False

1. The Bronfenbrenner's model has been divided into three levels.

2. The exposure to harmonious, violent, and funny content on television influences a growing child through imitation.

3. Genes are the codes or commands that are responsible for the physical and psychological development of the offspring.

WHAT YOU HAVE LEARNT



TERMINAL EXERCISE

1. Discuss the function of neurons and their structural composition.

2. Describe the process involved in information transmission between neurons.

3. Why are psychologists concerned with the role of heredity and environment while studying human behavior?
4. Discuss the functioning of human behavior.
5. Elaborate the role of endocrine system in human behavior.
6. What are the major social agents that guide human behavior?
7. Explain different levels of Bronfenbrenner's model that focuses on interconnection between the individual and the environment.
8. Differentiate between CNS, PNS and ANS.
9. Describe major functions of brain.
10. Cerebral Cortex covers the entire surface of the brain. How its different lobes function in transmitting and receiving information?

ANSWERS TO INTEXT QUESTIONS

2.1

(1-D), (2-A), (3-E), (4-B), (5-C)

2.2

1. Dendrite, 2. Voluntary muscles, 3. Stem cells,

4. Medulla, 5. Hippocampus

2.3

1. Hormones, 2. Cerebrum, 3.Testes,

4. Pancreas, 5. Thyroxin

2.4

1. 23, 2. Heredity and environment, 3. Individual

1. False, 2. True, 3. True

3

METHODS OF PSYCHOLOGICAL ENQUIRY-I

"Mr. Bhagat teaches in a college. He has been noticing a growing trend of students being excessively dependent on their smart phones. He has often seen students glued to their cell phones while carrying out their day to day activities, be it eating, drinking, walking, climbing stairs, writing an assignment, reading a book and so on. This pattern has made him quite curious to explore what kind of impact this kind of gadget dependence has on the physical and mental health of his students. In order to study this in an objective in a systematic manner, Mr. Bhagat needs to follow a scientific research procedure which will offer him an insight into the current situation." The present chapter on Methods of Psychological Enquiry will help you understand this process of research.

In the previous chapter you have learnt about the nature of Psychology; it's evolution as a discipline; the relationship of Psychology with other disciplines; different fields of Psychology and its applications. As we know Psychology is a scientific discipline that seeks to understand the complexities of human mind and behaviour by employing systematic scientific research. In this chapter you will study the nature of Psychological research with a special focus on the different methods of enquiry in understanding behaviour and their applications.

LEARNING OUTCOMES

After studying this lesson, learner :

- explains the scientific nature of Psychological research;
- indicates different goals of Psychological research;

- estimates different research designs and methods used in Psychological research;
- outlines different techniques of descriptive statistics including research design; and
- applies different methods of enquiry in understanding behaviour;

3.1 WHAT IS SCIENTIFIC PSYCHOLOGICAL RESEARCH?

Scientific research is a critical tool for successfully understanding and operating in our complex world. Without it, we would be forced to rely solely on intuition and common sense. While many of us feel confident in our abilities to interact with the world around us in order to make sense out of it, history is filled with examples of how very wrong we can be when we fail to recognize the need for evidence in supporting claims. Whether it was the strongly held belief that earth was the centre of the universe and sun revolves around it or whether it was the false belief that mental illness was a curse caused by possession of evil spirits, history has so many examples where random beliefs were treated '***as facts'***, without any scientific evidence. It was through systematic scientific research that preconceived notions and superstitions got challenged and an objective understanding of ourselves and the world was achieved.

Figure 3.1 showing the scientific aspect of psychological research

The goal of all scientists is to gain a better understanding of the world around them. Psychologists focus their attention on understanding behavior, as well as the cognitive (mental) and physiological (body) processes that underlie behavior. Some people are surprised to learn that Psychology is a science. They generally agree that Physics, Biology, and Chemistry are sciences but wonder what Psychology has in common with these other fields. Before answering this question, however, it is important to reflect on what Physics, Biology, and Chemistry have in common with *each other*. It is clearly not their subject matter. It is also not the equipment and techniques that they use. What these sciences share in common is an organized and systematic approach to understand the natural world. Similarly Psychology is a science because it adopts a systematic and objective approach to understand one of the aspects of the natural world: mind and behavior. Just like other scientists, psychologists embrace scientific values such as curiosity, scepticism, objectivity, empiricism etc. in their research as discussed in the previous chapters.

In contrast to other methods that people use to understand behavior of others, such as intuition and personal experience, scientific knowledge of Psychology is empirical i.e. it is grounded in objective, tangible evidence that can be observed time and time again, regardless of who is observing.

3.2 GOALS OF PSYCHOLOGICAL RESEARCH

Psychological researchers want to learn and understand human behaviour in a scientific manner. This understanding can be about how people think, how they feel, how they behave, or combination of these issues. The goal of scientific Psychology is to describe behavior in detail, provide explanation in various settings, formulate general laws to understand, establish prediction, and support behavioral change.

Research in Psychology has five basic goals:

1. **To Describe** – The first goal is to observe behavior and describe, often in minute detail, what was observed as objectively as possible.

   For example- Rajat seems unable to finish his homework.

2. **To Explain** – While descriptions come from observable data, psychologists must go beyond what is obvious and explain their observations. In other words, why did something happen?

   For example- Rajat seems unable to finish his homework because he watches too much TV.

3. **To Predict** – Once the psychologist knows what happens, and why it happens, they can begin to speculate what will happen in the future.

   For example- Rajat can finish his homework if he starts watching less TV (as the explanation suggests a link between watching more TV and inability to finish homework.)

4. **To Control** – Once what happens, why it happens and what is likely to happen in the future is known, the psychologist can exercise control over it in a careful and systematic manner.

   For example- By restricting the number of hours for watching TV, Rajat's behaviour could be controlled so that he spends less time watching TV and finishes his homework in time.

5. **To Improve** – Not only do psychologists attempt to control behavior, they want to do so in a positive manner. They want to improve a person's life and not make it worse.

   For example- Rajat could be taught to exercise self-control and gradually reduce the time spent on watching TV on his own.

INTEXT QUESTIONS 3.1

1 List the 5 goals of psychological research

2. Fill in the blanks with suitable answers

   i. The goal of scientific Psychology is to describe ________ in detail.

   ii. In contrast to other methods scientific knowledge of Psychology is _____________.

   iii. Psychologists focus their attention on understanding behavior, as well as the _________ and ________ processes that underlie behaviour.

ACTIVITY

Case Study: Arpit is an 18 year old young boy who lives with his parents and a younger sister. He loves playing video games while munching on junk food and sipping soft drinks. He usually spends hours playing video games without taking any break.

Of late he has realised that he has gained a lot of weight and has stopped fitting in his old clothes. He also experiences breathlessness whenever he walks a little. He has stopped going outdoors to play football with his friends. One day when his friends had forced him to join them, he couldn't run in the field. Also, his friends made fun of him. Now Arpit stays confined to home and spends most of the time playing video games and eating junk food. He does not like interacting with anyone. His parents are extremely worried for him.

Keeping in mind the above context, try to identify how the 5 goals of Psychological research can be implemented in Arpit's case.

3.3 TYPES OF PSYCHOLOGICAL RESEARCH

Psychological research can be classified in numerous ways, for example based on

1. The goals,
2. The setting for research, and
3. The applied methods.

1. On the basis of Goals

(i) **Fundamental research** also known as **basic research** aims to discover, describe and understand elementary features of behavior. Traditionally, fundamental studies focus on different aspects of problem solving, memory and learning etc. *For example*: How is the information stored and retrieved from memory?

(ii) **Applied research** deals with more specific, practical problems, in real-life context. It is concerned with finding solutions to practical problems and putting these solutions to work in order to help others. *For example*: How to promote safe driving practices such as use of helmets and seat belts among youngsters?

It's important to understand that the two types of research are closely related and each contributes to the other. As basic research provides the foundation on which the applied research can build upon and the application-oriented nature of applied research helps in expanding the existing theoretical base of Psychology.

Notes

2. On the basis of Setting

Based **on the setting of research**, both applied and fundamental research can be carried out in **laboratory or in a field setting**. However, fundamental research is mostly carried out in laboratory settings, and applied research is carried out in field settings.

(i) **In laboratory**, the researcher has a closer control on every aspect of the study; on the other hand, field research provides more realistic models to real-life situations. Laboratory experiments are usually done in a controlled and artificial laboratory setting, for example: A lab research to investigate the effect of intensity of light on accuracy of reading or to put simply if proper lighting conditions improves reading accuracy. Although laboratory research often takes things away from real life situations, however such research has often led to important discoveries and provides a base for scientific requirements for field research.

(ii) **Field research**, beyond searching for solutions to practical problems, is also used to test laboratory experiment results in real-life situations. For example in order to cope with stress the type of strategies used by people who have survived a natural disaster such as an earthquake or a cyclone etc. can be studied using a field research Moreover, the combination of the two is also employed by researchers.

3. On the Basis of Methods of Research Employed

Research can also be classified **as Quantitative and Qualitative research**.

(i) **Quantitative** research collects numerical data subjected to statistical analyses; its research methods include experimental and correlational research.

(ii) **Qualitative** analysis stands for a more comprehensive, realistic approach in which usually the obtained data is descriptive in nature. Interview and Observational research are examples of qualitative research methods. Qualitative approach often involves face to face interviews, observations or case studies, the findings for which cannot be summarized easily in a numerical way.

INTEXT QUESTIONS 3.2

State whether the following statements are True or False

1. Interview method is used in Qualitative research. True/False
2. Basic research is same as fundamental research. True/False
3. Fundamental research is directed at problem solving. True/False
4. Field Research is carried out in artificial lab settings. True/False
5. Qualitative research involves only numerical data. True/False

ACTIVITY

Based on your own experience or on things you have already learned about Psychology, list three fundamental research areas and three applied research areas of interest to you.

People sometimes suggest that Psychology cannot be a science because of its subject matter i.e. mind, thoughts and feelings etc. cannot be observed directly. Do you agree or disagree with the statement? Prepare a list of reasons to support your answer.

3.4 RESEARCH DESIGNS

A **research design** is *the specific method a researcher uses to collect, analyze, and interpret data*. Psychologists use three major types of research designs in their research, and each provides a unique approach for scientific investigation.

(i) **Descriptive research** is *research designed to provide a picture of the current state of affairs*.

(ii) **Correlational research** is *research designed to discover relationships among variables and to allow the prediction of future events from present ones*.

(iii) **Experimental research** is *research in which more than one group of comparable participants is created, followed by a manipulation of a given experience for these groups and a measurement of the effect of the manipulation*. Each of the three research designs varies according to its strengths and limitations, and it is important to understand how each differs.

Notes

3.4.1 Characteristics of Research Designs

i. **Descriptive Research: Assessing the Current State of Affairs:** Descriptive research is designed to create a view of the current thoughts, feelings, or behaviour of individuals.The most common research methods used for **descriptive research design are**: *case studies*, *surveys*, and *naturalistic observation. These methods would be explained in detail in chapter4.*

ii. **Experimental Research: Understanding the Causes of Behaviour**

a. **Description of Experimental Research :** The goal of experimental research design is to provide more definitive conclusions about the causal relationships among the variables in the research hypothesis than is available from correlational designs.

In order to understand the experimental research method, one must be familiar with the concept of variables. Variable can be defined as any measurable attribute of objects, things or beings. In an experimental research design, the two types of variables of interest are:

1. **Independent Variable**
2. **Dependent Variable.**

The **independent variable (IV)** is a variable *that is manipulated by the experimenter*.

The **dependent variable (DV)** is one on which the effect of manipulation of independent variable is measured. In experimental research independent and dependent variables share cause and effect relationship.

Other than independent and dependent variables there are **extraneous variables (EVs)** that are defined *as all those variables, which are not the independent variable, but could affect the results (DV) of the experiment*. EVs should be controlled where possible because it impacts the cause and effect relationship that the researcher wishes to study. The Extraneous variable that the experimenter is able to control in an experiment are called **control variables.**

Confounding variables are *those that have affected the results (DV), apart from the IV*. A confounding variable could be an extraneous variable that could not be controlled.

Example: Suppose a teacher is interested to know if discussion method of teaching leads to better retention of information. She/he would be acting as an experimenter and would be following the steps given below:

i. **Forming a Hypothesis:** On the basis of previous knowledge and researches, the experimenter (E) forms a hypothesis. In the present case, the teacher states a possible tentative answer to the problem. She/he may hypothesize that the discussion method leads to better retention. To verify the hypothesis, she will undertake an experiment.

ii. **Identifying Independent and Dependent Variables:** In the present example, independent variable would be the method of instruction (Discussion method) that the researcher would be manipulating. The dependent variable would be retention of information.

While studying the effect of IV on DV, the relationship is often influenced by a number of factors present in the environment. Such extraneous variables need to be controlled by the researcher. For example, in the present example the researcher needs to ensure that the two groups (discussion and no discussion) are similar in all respects (age, prior knowledge of the subject, intelligence etc.) except the treatment of IV.

iii. **Sampling of Participants:** The next step is to decide the population for the study and the method of sampling. For example, if the teacher in this case decides to include all 8th class students studying in CBSE schools in East Delhi, then all those students meeting the mentioned criteria comprise the population for the study. Since the population is huge, it would not be feasible for the teacher to include all the students in the study, thus she/he would be taking out a representative sample of 8th class students studying in CBSE schools in East Delhi from the entire population. Random sampling is considered to be one of the best methods of sampling because in this method all members of population have equal chance of being selected in the sample.

iv. **Planning (designing) the Experiment:** The experimenter will select group of students, divide them in half and expose them to the same learning material. However, one group continues to be instructed using traditional method of teaching. This group is called a 'control group' (absence of IV). While the other group called "experimental group" (presence of IV) would be exposed to discussion method. Retention of information for both the groups will then be compared.

v. **Verifying the Hypothesis:** If the experimenter finds a significant difference in the amount of learning material retained by the two groups, she/he may infer that discussion method is better for retention.

The above steps can help the experimenter to verify the hypotheses in a systematic manner.

Figure 3.1: Steps in conducting an Experiment

b. Different types of experiments used in Experimental Design are

1. ***Laboratory experiment***: In a laboratory experiment, researcher can manipulate the independent variable and has the liberty to assign people randomly to different groups and control extraneous variables.

For example, to study the effect of difficulty of study material on time taken for learning. In this experiment, IV would be materials of different levels of difficulty (***Group 1: Easy, Group 2: Difficult Level)*** DV would be the time taken to learn and one of the control variables would be age of subjects as it is important for the subjects in both the groups to be in the same age group so that any change in the learning time could be attributed to manipulation of IV i.e. difference in the difficulty level of study material and not to age related differences. Further the fatigue level, environmental factors such as noise, lighting etc. should also be controlled.

In a nutshell these are the characteristics of true experiments:

1. Manipulating the IV, while
2. Controlling the extraneous variables in a
3. Controlled environment, in order to
4. Measure the DV.

These are the characteristics of a laboratory experiment but there are other types of experiment that don't have all of the above features:

2. ***Quasi experiments***: Many a times in the experimental method discussed above, manipulating the IV and random assignment of subjects to both control and experimental group is not possible in the truest sense.

Sometimes it is *impossible* to manipulate the IV; for example, you cannot make people left-handed or right-handed. Whereas at times it is *unethical* to manipulate the IV; for example, it's immoral to turn people into drug addicts to compare them to non-addicts. Such cases involve the use of quasi experimental design.

For example, effect of consumption of junk food on physical health in children. In order to conduct a true experiment, the researcher would be required to systematically manipulate IV i.e. amount of junk food consumption across different groups (for example ***Group 1: no junk food consumption; Group 2: high amount of junk food consumption***) and subsequently measure the impact on physical health. However, since the experimental manipulation in this research requires making the subjects (children in this case) to consume junk food for the purpose of the study, this has ethical concerns. Therefore, the alternative solution is that the researcher would **select** the subjects who already belong to two different groups i.e. Group 1: who do not consume junk food; Group 2: who consume high amount of junk food. This makes it a quasi-experiment.

3. ***Field experiments***: These experiments are conducted in a natural setting and the participants may/may not be aware they are being studied. Since the study is conducted in field, controlling extraneous variables become difficult.

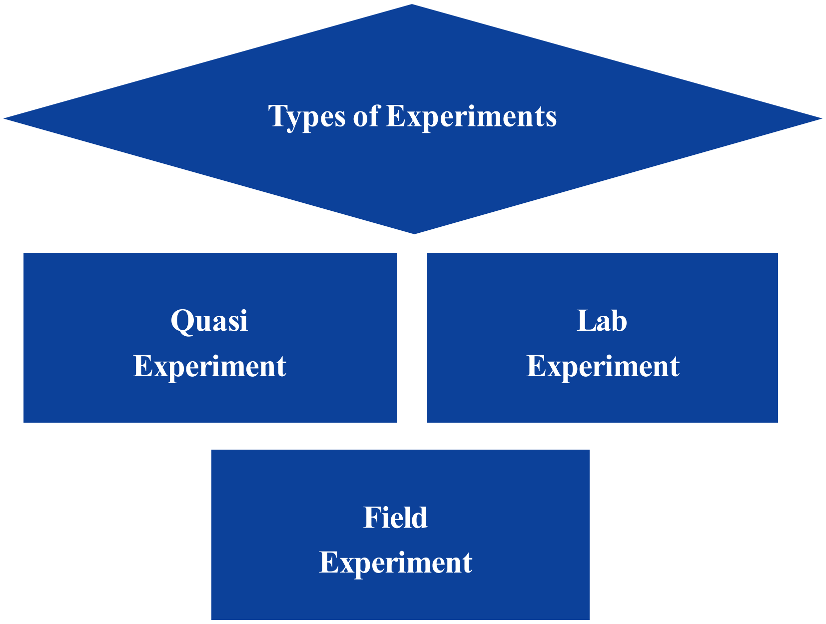


Figure 3.2: Types of Experiments used in Experimental research design

c. Strengths and Limitations of Experimental Research

Strengths:

1. It helps in establishing cause and effect relationship between independent and dependent variable.
2. The experimenter can exercise control. He/she can systematically manipulate some variables, carefully measure other variables and can also make some variables constant.
3. Replication of result under similar controlled conditions is possible.

Limitations

1. Exercising absolute control over variables is not possible.
2. Experimental laboratory setting is artificial, making the generalisation of the results to the real-life world a little difficult. The subjects may behave differently in a lab setting and in real life.
3. The results may get impacted by certain biases. Some of the most common biases encountered in experiments are:

   a. **Selection Bias** – It occurs when differences between groups are already present at the beginning of the experiment. Example: differences in age, intelligence etc.

   b. **Experimenter Bias** – These are the ways that the experimenter can accidentally influence the participant.

      For example: influence through their appearance or behaviour.

   c. **Demand Characteristics**: These refer to the clues in an experiment that lead the participants to think they know what the researcher is looking for (for example experimenter's body language might suggest approval/ disapproval to the subject and as a result may influence subject's responses).

iii. Correlational Research

a. **Description of Correlational Research:** It enables the researcher to study the relationship between different variables. The correlational method involves looking at relationships between two or more variables. While researchers can use correlations to see if a relationship exists among variables, the variables themselves are not under the control of the researchers.

Correlational research is a type of nonexperimental research in which the researcher measures two variables and assesses the statistical relationship (i.e., the correlation) between them with little or no effort to control extraneous variables. *There are essentially two reasons that the researchers interested in statistical relationships between variables would choose to conduct a correlational study rather than an experiment.*

1. **The first reason is that the researcher does not believe that the statistical relationship is a causal one**. *For example*, a researcher might want to study the relationship between number of classes attended and marks obtained in exams by a student. This researcher might then check to see whether participants' exam scores are strongly correlated with the number of classes attended. Neither of the two variables in this case i.e. the number of classes attended and the exam scores, is thought to cause the other, so there is no independent variable to manipulate.

2. **The other reason that researchers would choose to use a correlational study rather than an experiment is that the researchers *cannot* manipulate the independent variable because it is impossible, impractical, or unethical**. *For example*, if the researcher is interested in studying the effect of everyday stressors on physical and mental health of individuals, then in order to conduct an experiment, manipulation of amount of everyday stressors in this case would not be possible. Hence, the researcher would settle for measuring the number of everyday stressors along with the number of physical and mental symptoms. Later the researcher can find out if there's any relationship between the number of everyday stressors and number of physical and mental symptoms reported by the participants.

Different types of correlations

- ***Positive correlation*** is a relationship between two variables in which both variables either increase or decrease at the same time. For example, the relationship between two variables: height and weight. As height increases, weight also increases.

- ***Negative correlation*** is a relationship between two variables in which an increase in one variable is associated with a decrease in the other. For example, increase in practice and decrease in errors. With increase in practice, errors tend to decrease.

Notes

- ***Zero correlation/no correlation*** exist when there is no relationship between two variables. For example, there is no relationship between the color of eye and intelligence.

  The correlation value or correlation index ranges from -1.00 to +1.00 in which the + and – only indicates the direction of the relationship and does not indicate anything about the strength of the relationship, whereas the correlation value indicates the strength of the relationship. For example: a correlation value of +0.15 indicates a weak positive correlation, -0.41 indicates a moderate negative correlation while a value of -0.89 indicates a strong negative correlation.

b. Strengths and Limitations of Correlational Research

Strengths

1. Correlation allows the researcher to investigate naturally occurring variables that maybe unethical or impractical to test experimentally. For example, it would be unethical to conduct an experiment on whether alcohol consumption causes liver damage.

2. Correlation allows the researcher to clearly and easily see if there is a relationship between variables.

Limitations of Correlations

1. Correlation does not establish causation. Even if there is a very strong association between two variables, we cannot assume that one causes the other.

c. Differences between Correlations and Experiments : An experiment isolates and manipulates the independent variable to observe its impact on the dependent variable. In an experiment, attempt is made to control the impact of extraneous variables on the findings. Thus, experiments help in establishing cause and effect relationship.

A correlation on the other hand identifies variables and looks for a relationship between them. Unlike experiments, that reflects on the effect that an independent variable has upon a dependent variable, a correlation looks for a relationship between two variables.

This means that the experiment can predict cause and effect (causation) but a correlation can only predict a relationship.

Summing Up: Types of Research Designs

Table 1: Comparative description of the three research designs

Research design	**Goal**	**Advantages**	**Disadvantages**
Descriptive	To create a snapshot of the current state of affairs	Provides a relatively complete picture of what is occurring at a given time.	Does not assess relationships among variables as control cannot be exercised
Correlational	To assess the relationships between two variables	Allows testing of expected relationships between variables.	Cannot be used to draw inferences about the causal relationships between and among the variables.
Experimental	To assess the causal impact of one or more experimental manipulations on a dependent variable	Allows establishing causal relationships among variables.	Difficulty in experimentally manipulating many important variables. May be expensive and time consuming. Source: Stangor, 2011.

ACTIVITY

Discussion: For each of the following, decide whether it is most likely that the study described is experimental or correlational and explain why.

1. An education researcher compares the performance of students exposed to different training programs.

2. A teacher wants to study the relationship between students' reading scores and writing scores.

3. A researcher is interested to study the recall of words in two conditions: a) when the participant is instructed to read it aloud and (b) when the participant is instructed to create an image related to the word in mind.

4. A food technology expert wants to study the relationship between the temperature set in refrigerators and the amount of bacteria found in refrigerated food.

Ans.

1. Experimental, 2. Correlational,

3. Experimental, 4. Correlational

INTEXT QUESTIONS 3.3

1. **State whether following statements are True or False**

   a) Experiment is observation under controlled condition. True/False

   b) Independent Variable is manipulated by the researcher. True/False

   c) Control group does not receive the treatment of IV. True/False

   d) Control group needs to be different from experimental group with respect to every aspect. True/False

   e) The value of correlation can only be positive. True/False

2. **List the three types of research designs.**

3. **Match the following**

a. Descriptive Research.	i. manipulation of IV and measurement of DV
b. Correlational research	ii. Describing the existing state of affairs.
c. Experimental research	iii. Studies relationship between variables.

3.5 USE OF STATISTICAL METHODS IN PSYCHOLOGICAL RESEARCH

The data obtained by the researcher using the methods of Psychological research is described, organised, classified and analysed using statistics.

Statistics can be defined as a science of classifying, analysing and organising of quantitative data. There are two components of statistics:

1. Descriptive: Its purpose is to organize and summarise data. When we collect data, sometimes it is in an unorganized form: *for example*: Radhika rolls out a dice 30 times and gets the following scores on it each time 1, 3, 6, 5, 2, 1, 3, 4, 5, 3, 2, 4, 5, 6, 6, 1, 2, 3, 5, 3, 2, 2, 5, 5, 3, 2, 2, 4, 5, 6.

The above raw scores fail to convey any meaning on their own. We can organize the data by placing the data into a frequency table. Further the data can also be depicted in terms of relative frequencies and percentages.

Number on Dice	Frequency	Relative Frequency (Frequency/Total)	Relative Frequency Percentages (Frequency/Total)*100
1	3	0.1	10
2	7	0.2333	23.33
3	6	0.20	20
4	3	0.10	10
5	7	0.2333	23.33
6	4	0.1333	13.33

Figure 3: Depicting frequency table

The frequency table has made the data better organised. However, the data can further be depicted using graphical methods of representation that shows how frequently a number on dice occurs with greater clarity. For example: Bar diagram, Frequency Polygon or Pie chart could be used.

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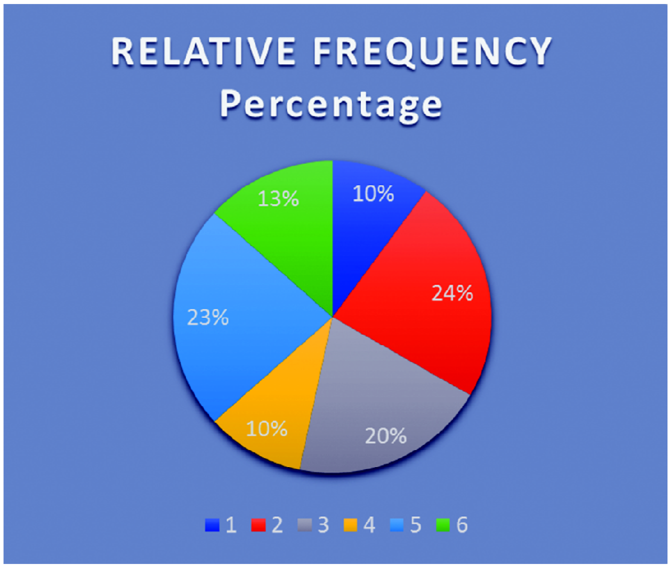

Figure 3.3: Depicting Pie Chart

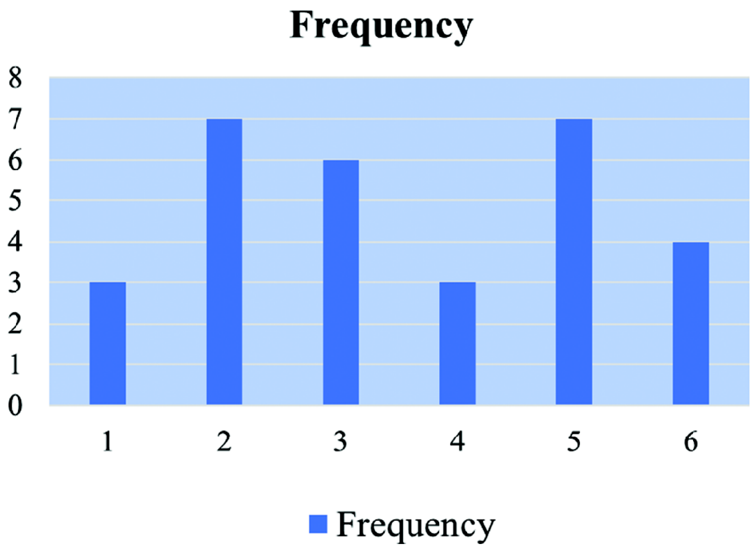

Figure 3.4: Depicting Bar diagram

Further measures of central tendency such as mean, median and mode could be used to give a single summary figure that best describes about the given set of observations. The detailed explanation of various measures used in descriptive statistics would be discussed in the subsequent chapters (chapter 5).

2. **Inferential**: Its purpose is to draw a conclusion about conditions that exist in a population from the study of a sample wherein population is defined as a complete set of observations about which the researcher wants to draw conclusions, whereas a sample is a small set of a population that the researcher studies.

   For example: If the researcher is interested in studying the academic performance

of Class 10 students in Delhi, then the academic performance of all the Class 10th students studying across all schools (private, government) in entire Delhi would be of interest. Since it is not feasible to cover the entire population therefore the researcher would systematically study a small sample from the population. For example the researcher may divide Delhi into 4 main zones such as East, West, North and South and take out a sample from both government and private school of each of the 4 zones to ensure representative sample.

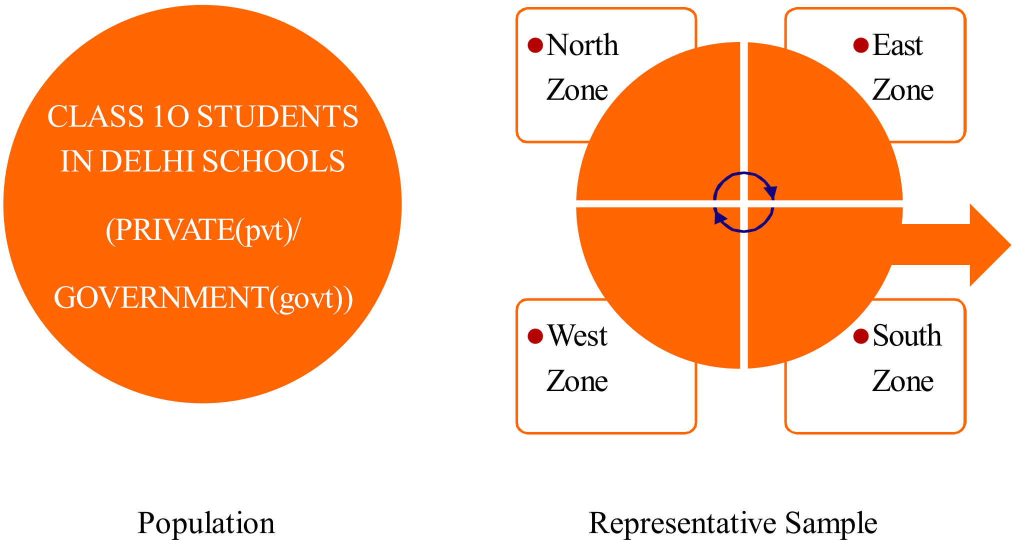

Figure 3.5: Depicting sample (Note: The figure is depicting population and sample)

Role of Statistics in Psychological Research

Statistics play a very important role in psychological research because:

1. Data and information can be presented briefly and precisely.
2. Results obtained are more accurate and objective.
3. Analysis of data is made more scientific.
4. General conclusions can be arrived at.
5. Making comparative analysis is possible.
6. Relationship between two or more variables can be objectively investigated.
7. Predictions about behaviour can be made.

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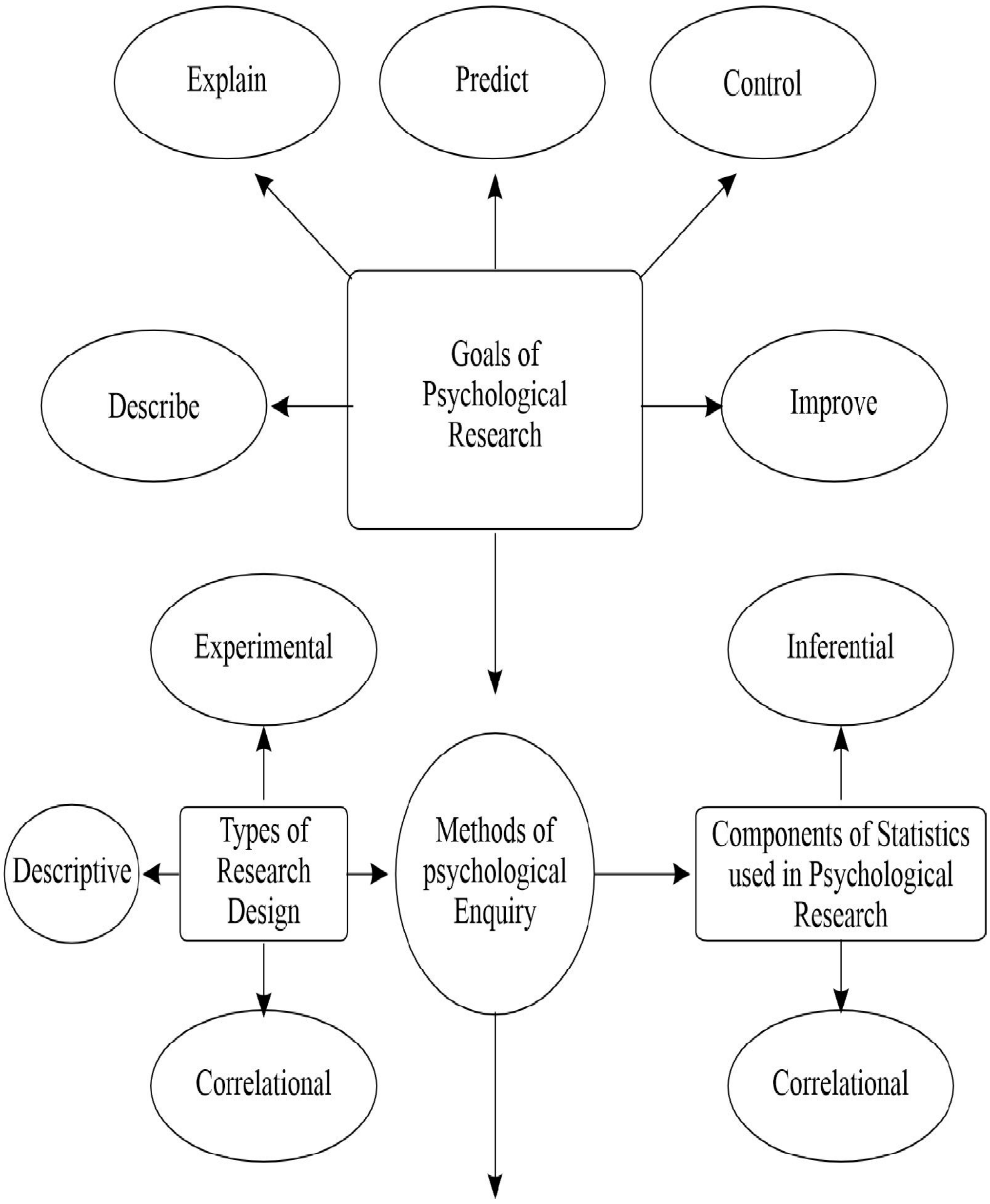
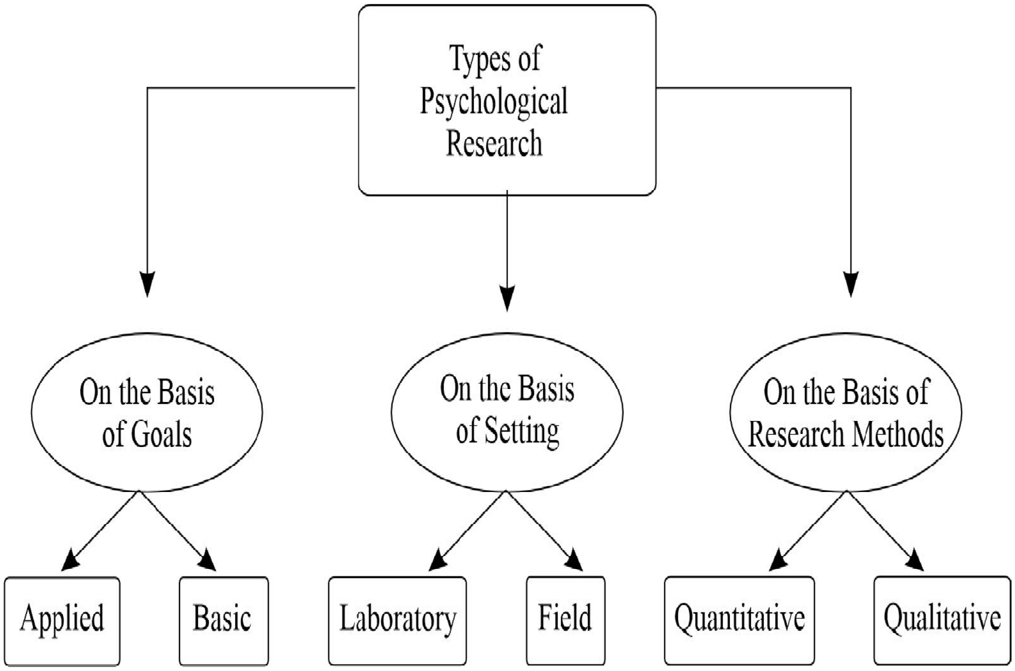
INTEXT QUESTIONS 3.4

1. What are the goals of psychological research?
2. Describe the different components of statistics used in psychological research?

WHAT YOU HAVE LEARNT





TERMINAL QUESTIONS

1. What are the goals of psychological research?
2. What are the types of psychological research?
3. What is a research design? Explain the three types of research designs that Psychologists use in their research.
4. Discuss the difference between correlational and experimental method.
5. What is the difference between Descriptive and Inferential Statistics?
6. Explain the role of statistics in psychological research.
7. Discuss the different types of correlations.
8. What are the different types of experiments used in experimental design?
9. Explain the different steps involved in conducting an experiment.
10. In an experimental research design, what are the different types of variables?

ANSWERS TO INTEXT QUESTIONS

3.1

1. **Goals of Psychological Research**

   To describe, to explain, to predict, to control, to improve

Goals of Psychological research	Case analysis
To Describe –	Arpit with his constant weight gain is becoming increasingly unhealthy.
To Explain	Arpit seems to be gaining weight because he spends most of the time playing video games and eating junk food and does not engage in any physical activity
To Predict –	Arpit can keep a check on his extra weight if he starts playing less videogames and consuming less junk food(as the explanation offered suggests a link between playing videogames and eating junk food and weight gain.)
To Control –	By restricting the number of hours for playing videogames and fixing 1-2 days in a week when he can have junk food, Arpit's behaviour could be controlled so that he spends less time playing video games, consumes less junk food and thus controls his weight gain.
To Improve	Arpit could be encouraged to get involved in some outdoor activity or sport that is of interest to him which could gradually reduce the time he spends on playing videogames and eating junk. Gradually with better fitness levels he could be encouraged to start playing football with his friends again and get back to his active life.

2. (i) Behavior,

   (ii) Empirical,

   (iii) Cognitive (mental) and Physiological (body)

3.2

True and False

1. True
2. True
3. False
4. False
5. False

3.3

1. True and False

a) False

b) True

c) True

d) False

e) False

2. Three types of research design

Descriptive research

Experimental research

Correlational research

3. Match the following

a. ii.

b. iii.

c. i.

Notes

3.4

1. Five goals of Psychological Research are:-

   Describe, Explain, Predict, Control, Predict

2. Different components of statistics used in psychological research are:-

   - Descriptive :- Its purpose is to organize and summarise data
   - Inferential :- Its purpose is to draw a conclusion about conditions that exist in a population from the study of a sample

4

METHODS OF PSYCHOLOGICAL ENQUIRY-II

"Dr. Shalini is a school principal. She has been worried about the issue of examination stress and anxiety that her students have been reporting of late. She wishes to study this situation, therefore all the class teachers were instructed to ask a set of questions to all the students individually and record their answers. The students responses were analysed and it showed a decline in academic performance even for those students who have been performing consistently well otherwise. Dr. Shalini feels alarmed by the realisation that the stress and pressure is taking a toll on her students' performance. She then further wants to investigate which are the classes wherein the students are getting most affected. After identifying those grades, she wants the school counsellors to have a word with these students and get an insight into what are their areas of concerns. She feels that till the time a communication is established between the affected students and the school authorities, a concrete solution for this problem cannot be achieved." The stated example clearly highlights the need and importance of certain methods of research which enables a systematic enquiry into the experiences of people. Such research methods follow a qualitative approach where the focus is on understanding the nature of underlying psychological aspects.

In the previous chapter, you have learnt about certain methods used in psychological research, which are Experimental and Correlational; their basic quantitative nature, applications as well as strengths and limitations. As we know, Psychology is a scientific discipline that seeks to understand the complexities of mind and behaviour by diverse methods of enquiry. In this chapter, you will study some other methods of psychological research with a special focus on their diverse nature and application. Later in the chapter, ethical issues pertaining to research would be discussed so that the learner

Notes

understands not just the theoretical aspects of research methods but also the ethical considerations to be kept in mind for effective application of the methods.

LEARNING OUTCOMES

After studying this lesson, learner :

- outlines basic research skills in Psychology;
- examines different methods used in Psychological research;
- explains the various ethical issues in Psychology; and
- relates on various ethical concerns when conducting Psychological Enquiry.

4.1 WHAT IS DESCRIPTIVE RESEARCH?

In the previous chapter, we have discussed about experimental and correlation research in detail. Now in this chapter we will be discussing another type of research i.e. descriptive research. **Descriptive research** is used to describe the existing condition in great detail. It is used to describe general or specific behaviours and attributes that are observed and measured. In conditions where enough research is not available in a particular area, designing an experiment becomes difficult. In such cases, a researcher often begins with a non-experimental approach, such as a descriptive study, to gather more information about the topic before designing an experiment or correlational study. Descriptive research can also be used as an extension of experimental study in order to describe the existing status of events i.e. once a solution suggested by experimental analysis is implemented. Thus descriptive method is useful in both the initial and final stages of investigation.

Descriptive analysis describes what exists and tries to pave the ground for finding new facts. It includes gathering of data related to individuals, group of individuals, events and situations and then organize, tabulate, depict and describe the obtained data. As the name suggests, this approach is applied to describe variables rather than to test predicted relationship between variables. Its main objective is description. It does not make predictions and does not determine cause and effect.

This type of research focuses on the questions like *Who*, *What*, *Where* and *How*. For example: Descriptive approach could be applied to investigate the following questions:

- Do teachers hold favourable attitudes toward using computers in schools?

- What are the positive and negative aspects of your job?
- What are the negative aspects of your home environment?
- Do students prefer reading print based textbooks or online books?
- How has student involvement in outdoor activities changed over the last 10 years?

Descriptive research can be either quantitative or qualitative in its approach. It can involve collections of quantitative information that can be tabulated in numerical form, such as the quantitative difference in the frequency of using emoticons in text messages across different age groups, or it can qualitatively describe categories of information such as the issues and concerns raised by female travellers pertaining to safe public transport. Across the quantitative and qualitative continuum, the most commonly used methodological approaches are interviews, surveys, observational studies, case studies.

Before going further, it is important to understand that these research methods can be of two types i.e., a cross sectional study or a longitudinal study.

Cross sectional study is one in which data is collected from a population at a specific point of time. It is more commonly used by researchers than the longitudinal design as it is easier to conduct and yields quick results. This design becomes useful when the goal is to understand characteristics of a population at that particular point of time. This implies that if the study is to be repeated, fresh participants will need to be recruited.

For example, academic performance of Class X students in Mathematics and Science.

Longitudinal study, on the other hand, involves data collection from the same sample repeatedly over a period of time. Depending on the type of information required, longitudinal studies can extend from few years to decades. This design becomes useful when the purpose of the study is to observe change and development in an individual or group over a time span. Needless to say, it is time consuming and the success of such studies is highly dependent on the continued and active participation of the individuals.

For example, research on the cognitive abilities of individuals at ages 5, 15 and 25.

4.2 TYPES OF DESCRIPTIVE RESEARCH METHODS

The most common methods used for **descriptive research design** are *surveys, observation, case studies and interviews. These methods vary along the*

Quantitative-Qualitative continuum with respect to the degree of quantification involved.

4.2.1 Descriptive Methods with Quantitative Approach

Surveys and observation are the two methods that employ a more quantitative approach of data collection and analysis. We shall learn more about them in this section.

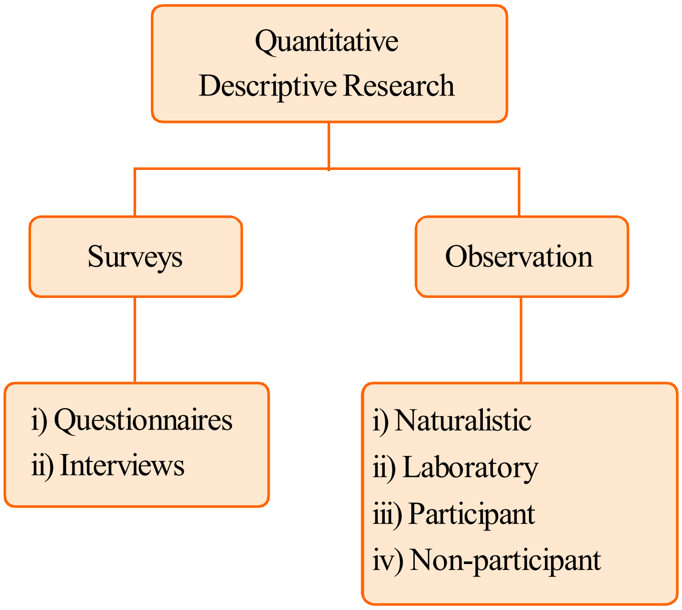


Figure 4.1: Types of Quantitative Descriptive methods

4.2.1.1 Survey Method

Survey methods are widely used in descriptive research to study beliefs, opinions, attitudes, motivation and behaviour of individuals. Survey method focuses on various attributes of individuals that emerge on the basis of their membership of certain social groups such as gender, income, political and religious affiliations etc. It also considers attributes that are psychological in nature such as opinions, beliefs, etc.

Data for survey can be collected through two primary modes- questionnaires and interviews.

i. **Questionnaires-**Typically, a questionnaire is a paper-and-pencil instrument that is administered to the respondents. Certain types of questions that are included in the questionnaire are:

- *Open-ended questions:* Open-ended items are useful when researchers do not know how participants might respond or when they want to avoid

influencing their responses and when in depth information is required. Open-ended responses are mostly qualitative in nature.

For example, "Please describe the time when you felt you were unable to handle exam pressure."

- *Close-ended questions:* Close-ended questions are used when researchers have a good idea of the different responses that participants might make and the respondent has to choose from the given options. They are more quantitative in nature.

  For example, "Do you like to exercise?" Yes / No

- *Rating questions:* A rating question is used to find out how survey-takers would rate something. It's quite useful to gauge peoples' opinions across the board.

  For example, "How would you rate a restaurant's service on a scale of 1-5?"

- *Multiple choice questions:* Such questions provide multiple response options for the respondents to choose from.

  For example, "The last cricket world cup was played in the year- 2016 | 2017 | 2018 | 2019"

Modes of Questionnaire Administration in Survey Research

Surveys can be administered in four ways: through the mail, by telephone, in-person or online. When deciding which of these approaches to use, researchers consider: the cost of contacting the study participant and of data collection, the literacy level of participants, response rate requirements, the complexity of the information that is being sought and the mix of open-ended and close-ended questions.

ii. **Interviews:** Between the two broad types of surveys, interviews are more personal type of surveys which enables probing. Probing questions are usually instantaneous, based on the answer of the respondent, and allow the interviewer to get more insights into the required area. Questionnaires do not provide the freedom to ask follow-up questions to explore the answers of the respondents, but interviews do.

An interview includes two persons - the researcher as the interviewer, and the respondent as the interviewee. There are several survey methods that utilize

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interviews. These are the personal or face-to-face interview, the telephonic interview, and more recently, the online interview. The interview method will be discussed in detail in subsequent section.

Table 1: Comparative Analysis of The Two Types of Data Collection Instruments in Survey

Method	Purpose	Advantages	Disadvantages
Questionnaires	To gather large information in a short period of time	- Sample group can remain anonymous -Cost effective -Can generate large amount of data	-Difficult to gain deeper information
Interviews	To reflect emotions and experiences, and explore issues more deeply	- Process of data collection can be directed - Specific type of information can be collected	-Time consuming -More expenditure to arrange interviews, travelling etc.

Strengths of the Survey Method

- Access to a wide range of participants.
- Faster data collection than other methods.
- Relatively inexpensive data collection.

Limitations of the Survey Method

- Data may /may not be in depth.
- Sample used for data collection may lack representativeness.
- Data may get impacted by researcher's own perception and biases.

4.2.1.2 Observation Method

Observation is a fundamental technique of data collection that refers to watching and listening to the behaviour of other person over time without manipulating and controlling it. It is always a directed activity that can be used to study the following categories of behaviour:

Nonverbal behaviour: focuses on body language including eye movements, facial expressions, body postures, gestures etc.

Linguistic behaviour: focuses on speech content

Extra linguistic behaviour: focuses on any behaviour that accompanies speech such as tone, intensity, pitch, volume etc.

Types of Observation Method:

i. **Naturalistic/ field observation** is a study where a researcher observes the subject in its natural environment. It involves collecting information from some environment of interest just by watching what goes on. This makes the observations more true to what happens in the natural world.

For example, a researcher wants to study difference in classroom behaviour in public and private schools, s/he might visit the schools/classrooms and observe the behaviour of the students with each other as well as with the teachers.

ii. **Laboratory observation** is one in which the researcher observes the subject in a controlled environment. The researcher decides where the observation will take place, at what time, with which participants, in what circumstances and uses a systematic procedure.

For example, to study the effect of different type of video games on the level of aggression, the participants might be put in different groups and are made to play different categories of video games. Their behaviour will then be observed and recorded to look for aggression level.

iii. **Participant observation** is one in which the researcher is an integral part of the observation setting. The researcher freely interacts with other group members, participates in various activities of the group, becomes immersed in the events and adopts the routine patterns of the group to be observed. The behaviour is thus studied with an insider's perspective.

For example, a manager may be interested to study communication effectiveness of employees with clients. He/she may involve them in certain group activities while participating along with them and in that engagement observe their communication skills.

iv. **Non- participant observation** is one in which the researcher adopts a distant perspective and observes an event or behaviour as an outsider without engaging with the group to be observed. Unlike participant observation where the

researcher adopts an active role by engaging with group members, in non-participant observation the researcher adopts a relatively passive role by just carefully observing and restricting any other form of engagement.

For example, a teacher may organize a group activity for students and observe them for leadership qualities, without participating in the student's activities in any manner.

Strengths of Observation Method

- Since it is mostly done in real life settings, it helps in generalising the findings.
- Large amount of data gets collected within a short amount of time. This means a large sample can be obtained resulting in the findings being represented and having the ability to be generalized to a large population.
- Can be used to explore new areas and to generate novel ideas.

Limitations of Observation Method

- The researcher needs to be trained to be able to recognise aspects of a situation that are psychologically significant and worth further attention.
- It is susceptible to observer bias i.e. subjective bias of the observer can impact the findings.

ACTIVITY

Based on your own experience or on things you have already learned about Psychology, list two settings you would like to explore using naturalistic observations and laboratory observations respectively.

INTEXT QUESTIONS 4.1

1. State whether the following statements are 'True' or 'False'

   i) Participant observation has no involvement of the observer with the group to be observed. True/False

   ii) Surveys can be used for large scale data collection. True/False

   iii) Qualitative research involves only numerical data. True/False

2. Match the following

i. Laboratory Observation	a. careful observation in real life settings
ii. Naturalistic Observation	b. distant observation without any active participation in activities of the observed group.
iii. Non participant Observation	c. controlled observation in artificial setting

4.2.2 Descriptive methods with Qualitative approach

As already mentioned in the beginning of this lesson, descriptive research can be either quantitative or qualitative. It can involve collections of quantitative information such as number of times a person chooses to blow horn or honk while driving, or it can describe categories of information such as the difference between males and females in their reasons behind excessive honking.

Descriptive research with quantitative focus involves gathering data that describe events which are then numerically organized and tabulated. Whereas with qualitative focus, in-depth, narrative descriptions of few numbers of cases, are used as a tool to organize data into patterns during analysis. These rich qualitative descriptions can emerge using certain methods such as case study and interviews.

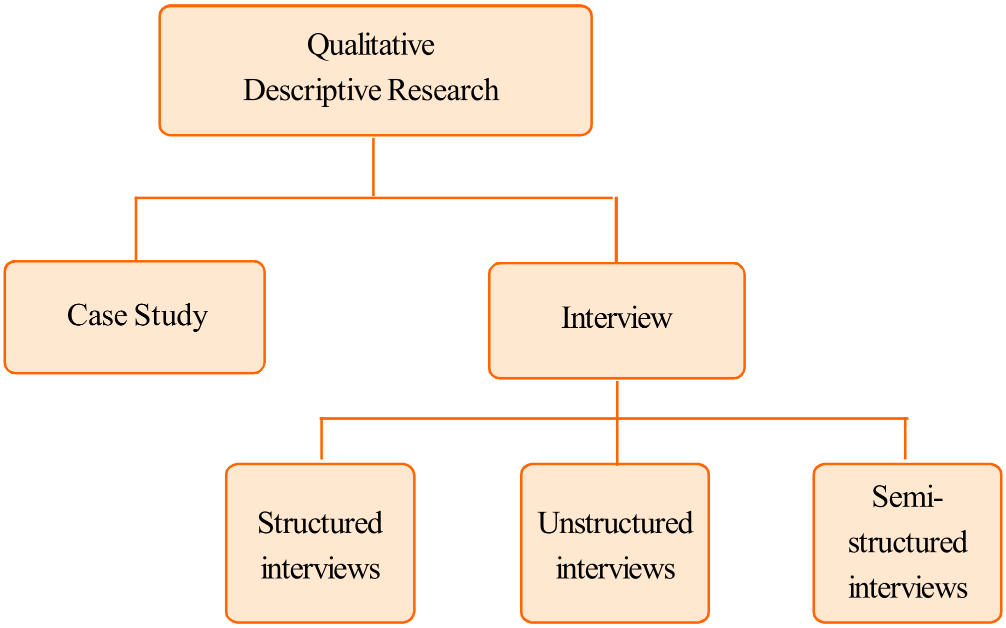


Figure 4.2: Types of Qualitative Descriptive methods

4.2.2.1 Case Study

Case study method in descriptive research involves detailed study of a single case, typically over an extended period of time. It can involve naturalistic observations, and include psychological testing, interviews, diaries, archival data etc. These are often intensive detailed histories of people's lives or descriptive accounts of important aspects.

What is a case?

A single case doesn't have to mean just one single person. It might be a family, a social group, or even a single organisation. In fact a case study can involve dealing with quite a number of individuals.

Main Characteristics of the Case Study

a. *Descriptive*- The data collected in case studies constitute descriptions of psychological processes and events, and of contexts in which they occurred (qualitative data). The main emphasis is always on the construction of verbal descriptions of behaviour or experience but quantitative data may also be collected. Also, high levels of details are provided.

b. *Narrowly focused*- A case study that typically offers description of only a single individual, and sometimes about groups. Often this type of case study focuses on a limited aspect of a person.

c. *Combines objective and subjective data*- The researcher may combine objective and subjective data. All data is regarded as valid data for analysis, and also as a basis for inferences within the case study- which includes both the objective description of behaviour and its context along with details of the subjective aspect, such as feelings, beliefs etc.

Table 2: Types of cases

Type of case	Description
Person	The study of one single individual, generally using several different research methods
Group	The study of a single distinctive set of people, such as a family or small group of friends.

Location	The study of a particular place, and the way that it is used or regarded by people
Organization	The study of a single organisation or company, and the way that people act within it.
Event	The study of a particular social or cultural event, and the interpretations of that event by those participating in it.

Source: http://www.psyking.net/HTMLobj-3838/Case_Study_Method.pdf

Strengths of Case Study Method

- Can gather extensive information, both qualitative and quantitative.
- Helps in providing insight into phenomena or experience which can't be gained otherwise.

Limitations of Case Study Method

- Since only one case is involved, generalization to the rest of the population is extremely limited.
- Can be very time consuming
- Due to the extensive and prolonged engagement of the researcher, their beliefs, opinions and biases can influence findings.
- Replication of findings is not possible.

4.2.2.2 Interviews

As we have already mentioned about interviews as one of the techniques of data collection under survey method, in this segment we will focus on the interview technique in detail. Interviews can be defined as a qualitative research technique which involves asking questions to a small number of respondents to explore their perspectives on a particular idea, program or situation. They can be conducted on individuals, as well as in groups. Individual interviews are the ones where one person is interviewed at a time, whereas in group interviews, multiple candidates are interviewed simultaneously.

There are three different formats of interviews: structured, semi-structured and unstructured.

i. **Structured interviews** : These consist of a series of pre-determined questions that all interviewees answer in the same order. Data analysis usually tends to be more straightforward because researcher can compare and contrast different answers given to the same questions. Structured interview is a way of trying to ensure comparability across the sample. The questions in a structured interview may be phrased in such a way that a limited range of responses is elicited.

For example, "Do you think that health services in this area are excellent/good/ average or poor?" This is an example of a closed question where the possible answers are defined in advance.

ii. **Unstructured interviews:** Unstructured interviews or in-depth interviews are the ones in which questions are not prepared prior to the interview and data collection is conducted in an informal manner. The interviewer approaches the interview with the aim of discussing a limited number of topics, sometimes as few as one or two, and frames successive questions according to the interviewee's previous response. It is often used to obtain detailed accounts of an individual's experience. Unstructured interviews can be associated with a high level of bias and comparison of answers given by different respondents tends to be difficult due to the differences in formulation of questions.

For example, a researcher wants to study the cultural values of a community. For that she/he might not prepare any questions in advance, instead have a conversation with community members and then dig into the cultural values as the conversation unfolds.

iii. **Semi-structured interviews**: These contain the components of both structured and unstructured interviews. In semi-structured interviews, interviewer prepares a set of same questions to be answered by all interviewees. At the same time, additional questions might be asked during interviews to clarify and/or further expand certain issues. With semi-structured interviewing, the open-ended nature of the question defines the topic under investigation, but also provides opportunities for the interviewer and interviewee to discuss some topics in more detail. If the interviewee has difficulty answering a question or provides only a brief response, the interviewer can use cues or prompts to encourage the interviewee to consider the question further. In a semi-structured interview, the interviewer also has the freedom to probe the interviewee to elaborate on the original response or to follow a line of inquiry introduced by the interviewee.

For example, a policy maker wants to study how the new policy affects the work of doctors. For this s/he makes develops a set of questions (like, 'Are you aware that a new policy has been made?', 'Do you think it is in the favour of healthcare professionals?') and also keeps scope to add questions on the spot, based on the answers of the participants (like, if the participant answers that the policy is in their favour, the policy maker might ask 'what part of the policy do you think favours doctors?', and if the participant says that it isn't in their favour, s/he might enquire about the suggested changes that might make the policy favourable to them.)

With semi-structured interviewing, the open-ended nature of the question defines the topic under investigation, but also provides opportunities for the interviewer and interviewee to discuss some topics in more detail. Semi-structured interviews are useful when collecting attitudinal information on a large scale. If the interviewee has difficulty answering a question or provides only a brief response, the interviewer can use cues to encourage the interviewee to consider the question further.

Let us understand the process of interview with the help of the example given in the box.

EXAMPLE

Interviewer: "I'd like to hear your thoughts on whether changes in traffic rules have changed the traffic scenario on the roads."

Interviewee: "Absolutely! There is a remarkable change. No doubt about it."

Interviewer: "In what way has it changed?"

Interviewee: "I think people have become more careful on roads and their awareness about traffic rules has also increased."

Interviewer:" What do you think has led to that kind of a change?"

Interviewee: "…Well… I think there's strict monitoring and implementation of traffic rules that has worked out quite well. Also, the revised traffic penalties have also made people more cautious on roads."

Conducting the interviews: As mentioned earlier, interviews can be conducted individually or in a group setting. The researcher must first decide whether s/he wants to interview one person at a time or a group of people at once. Having decided on individual or group approaches, she/he now needs to decide which method of interviewing she/he wishes to use

There are three primary ways to conduct qualitative interviews on the basis of modalities:

a. ***Face to face:*** Here the researcher and respondent meet together. This is the most frequently used technique, and enables attention to be paid to non-verbal behaviour and establish a rapport over an extended period of time. Face-to-face or personal interviews are very labour intensive, but can be the best way of collecting high quality data. Face-to-face interviews are preferable when the subject matter is very sensitive, if the questions are very complex or if the interview is likely to be lengthy. Interviewing skills are dealt with in more detail later in this module.

Compared to other methods of data collection, face-to-face interviewing offers a greater degree of flexibility. A skilled interviewer can explain the purpose of the interview and encourage potential respondents to co-operate; they can also clarify questions, correct misunderstandings, offer prompts, probe responses and follow up on new ideas in a way that is just not possible with other methods.

b. ***Telephone:*** This can be used where a face-to-face interview is not possible, and may be appropriate where the topic is not sensitive and non-verbal behaviour is less important. Telephone conferencing may enable focus groups, but there are major problems in 'turn taking' and ensuring all are able to participate. Video conferencing adds a further dimension to this kind of distance interviewing.

Telephone interviews can be a very effective and economical way of collecting data where the sample to be contacted are all accessible via the telephone. They are not an appropriate method of data collection for a very deprived population where telephone ownership is likely to be low. However, telephone interviewing can be ideally suited to busy professional respondents, such as general practitioners, when the telephone numbers can be easily identified and timed appointments set up. Telephone interviews are also particularly useful when the respondents to be interviewed are widely distributed geographically.

One of the main disadvantages of a telephone interview is that it is difficult to incorporate visual aids and prompts and the respondents cannot read cards or scales. The length of a telephone interview is also limited, although this will vary with subject area and motivation. Nevertheless it is possible to make prior appointments for a telephone interview and send stimulus material for the respondent to look at in advance of the interview. A prior appointment

and covering letter may enhance the response rate and length of interview.

c. ***Web Interviews***: The Internet provides opportunities through chat rooms for interviewing, and is a growing method of conducting in-depth interviews. There are clearly major problems in establishing rapport, and non-verbal behaviour will be missed entirely. However, some research suggests that respondents may be willing to be more open about personal matters in this kind of format. Issues of authenticity of identity may also be an issue. Methods of using the web include e-mail interviews, bulletin boards and interactive web sites. Chat rooms can be used to simulate focus groups.

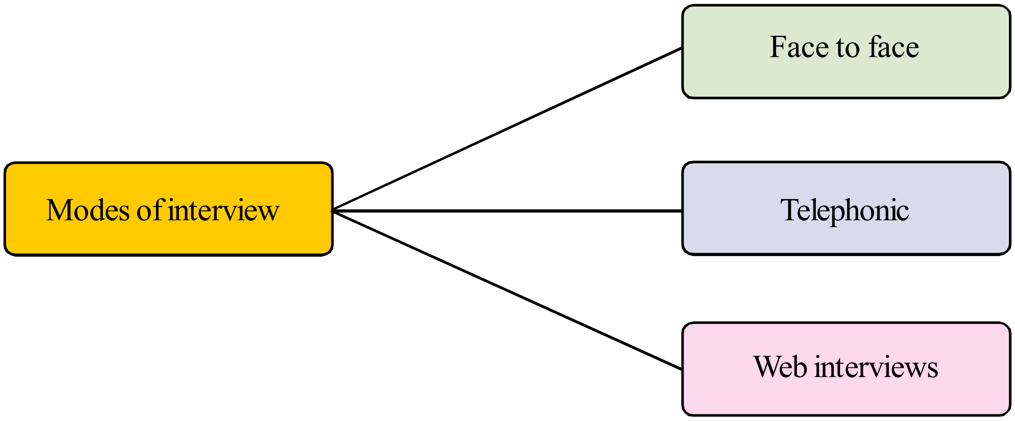


Figure 4.3: Modes of conducting interview

Strengths of Interview Method

- It provides in depth information about the area of interest.
- Ambiguities and doubts can be clarified, improving the quality of data.
- It helps in discovering how individuals think and feel about a topic and why they hold certain beliefs, values and opinions.

Limitations of Interview Method

- It can be very time consuming and expensive.
- The interviewers need to be trained to conduct effective interviews.
- The quality of data obtained from interviews depends on the communication skills of both the participant and interviewee to an extent.

INTEXT QUESTIONS 4.2

1. State whether the following statements are 'True' or 'False'

   i. Structured interviews make comparative analysis impossible.
   True/False

   ii. Case study technique involves brief information about a case.
   True/False

   iii. An event can be a subject matter of case study analysis.
   True/False

   iv. Unstructured interviews allow in depth information.
   True/False

2. Answer which is the most appropriate interview approach (structured/ semi structured/ unstructured) in each of the following studies?

   i. A researcher wants to compare the criterion of job satisfaction reported by manager and subordinates.

   ii. A health worker wants to study the attitudes pertaining to importance of menstrual hygiene in teenage girls.

   iii. A psychologist wishes to understand coping experience of terminally ill patients.

   iv. A researcher is interested to study the opinions of youngsters about the importance of social media in today's world.

4.3 ETHICAL CONCERNS IN PSYCHOLOGICAL RESEARCH

The British Psychological Society (BPS) and the American Psychological Association (APA) have provided an ethical framework for psychologists to attempt to adhere to when conducting psychological research. Some of the ethical concerns are:

i. Protection from harm- Perhaps the most important ethical principle is that during the course of research, participants should be protected from harm, psychological or otherwise. Researchers must ensure that the physical conditions in which the research is being carried out are not detrimental to the physical wellbeing of the participants. Similarly, the psychological wellbeing needs to be

protected as well. For example: researchers can do their upmost to prevent any undue stress on their participants.

ii. **Right to Withdraw-** Another ethical concern is to ensure that the participants have the right to withdraw from the research. It does not involve just informing them that they can leave the study *at any time*, but also informing them that they have the right to withdraw their results from the study at any time.

iii. **Confidentiality-** Maintaining confidentiality is an ethical principle that ensures that the results of the research are kept anonymous and confidential. Further access to the research and participant information should be safeguarded against any form of misuse. Ideally no one should be able to identify the participants from the results.

iv. **Informed Consent-** For any research to be ethical, the researcher must have gained informed consent from the participants. The 'informed' part of this ethical principle is the most important part, wherein the participants are made aware of the nature of the study, and their rights in the present research. They are also informed about the risks and/or benefits involved in the study. It is of no use to gain consent from participants without bringing all this to their knowledge.

v. **Deception-** Some studies require that the participants are not informed about the real purpose of the study beforehand, for example Milgram's (1963) experiment on obedience, where the participants were made to believe that they are giving electrical shock to the fellow participants (who were actually confederates), when in reality there was no electrical shock involved. This experiment was conducted to study obedience towards authority figure. Deception is majorly used in research to prevent demand characteristics and socially desirable behaviour which can impact the responses of the participants.

vi. **Debriefing-** Debriefing is conducted with the participants after the study has taken place. It is done to ensure that the participants are aware of the intent of the study and also about how the collected data will be used. It has a number of aims. Firstly, it aims to ensure that none of the participants have been harmed in any way by the study. Secondly, it aims to make sure that the researchers have obtained informed consent regarding the use of data. Thirdly, it allows the participants an opportunity to remove their results from the study. Finally, it allows the participants to ask any questions about the study to make sure they fully understand its content.

INTEXT QUESTIONS 4.3

Fill in the blanks with suitable answers

1. Maintaining ____________ is an ethical principle that ensures that the results of the research are kept anonymous.

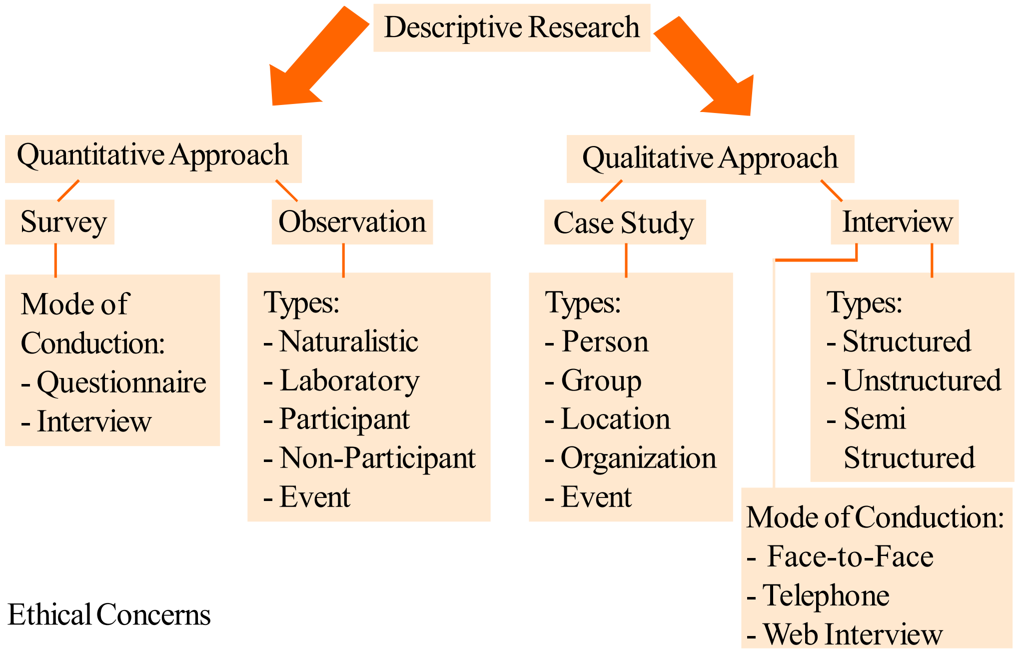
2. Another ethical concern is to ensure that the participants have the ___________ from the research.

3. Participants are also informed about the ________ and/or _______ involved in the study.

4. Deception is majorly used in research to prevent ____________ and _______________ which can impact the responses of the participants.

5. The _____________ and ___________ have provided an ethical framework for psychologists to be followed when conducting psychological research.

WHAT YOU HAVE LEARNT



Ethical Concerns

- Protection from harm
- Right to withdraw

- Confidentiality
- Informed consent
- Deception
- Debriefing

TERMINAL QUESTIONS

1. What are cross sectional and longitudinal methods of research?
2. How is the descriptive research different from experimental and correlational research?
3. Explain the different types of observation techniques along with their strengths and limitations?
4. Discuss the case study method of research in detail.
5. Differentiate between the different formats of interview.
6. List the various ethical concerns in Psychological research?
7. What are the different strengths and limitations of case study method?
8. Compare different primary ways to conduct qualitative interviews on the basis of modalities.
9. What are the types of questions that are included in the questionnaire under survey method?
10. Observational method is used to study the different categories of behaviour. Identify the different categories of behaviour.
11. What are the main characteristics of the case study?

ANSWERS TO INTEXT QUESTIONS

4.1

1. i. False   ii. True   iii. False

2. i. c.

ii. a.

iii. b

4.2

1. i. True

   ii. False

   iii. True

   iv. True

2. i. Structured

   ii. Semi structured

   iii. Unstructured

   iv. Semi structured

4.3

1. Confidentiality
2. Right to withdraw
3. Risks and/or benefits
4. Demand characteristics and socially desirable behaviour
5. The British Psychological Society (BPS) and the American Psychological Association (APA)

5

BASIC STATISTICS

Numbers play an important role in our lives. We use numbers everyday to know the temperature,weather conditions,our height,weight, blood pressure etc. These numbers also help us in comparing our selves with others. For example , one person may be taller than the other ,but may have lesser weight. Two indviduals will note exhibit the same attriutes in the same strength when measured on a scale.This makes understanding of basic statistics crucial for us.

In the previous lesson you have learnt about the various methods of psychological research.Some of these are observation,interview, case study etc. The skills involved in carrying out research were also explained . You learnt and reflected on the various ethical concerns that must be kept in mind while doing research.Initially the data is raw and unorganized. We then apply statistics to enhance the understanding of the results.Statistics is a branch of Mathematics which deals with selection, classification, tabulation, organisation and analysis of numerical facts.The data is used for description, comparison and prediction.For statistics to give meaningful results the objective of the research should be clear.Statistics has a wide application. It is indispensable in Psychology as it consists of various techniques to organize, summarize, and interpret the raw data. It is used by researchers to conduct various studies in order to examine and understand the relationship between various variables. Psychologists rely on statistical applications to establish the reliability,validity and norms of a test.It is also used to make the collected information and data more meaningful and comprehensive.

LEARNING OUTCOMES

After studying this lesson, learner :

- defines the concept of central tendency;
- explains the purpose and function of three types of central tendency (i.e., mean,median and mode);
- enlists the characteristics of mean,median and mode;
- calculates the mean,median and mode from the given data;
- explains the organization of raw data and presenting it in the form of a frequency distribution;
- describes that data can be presented in a graphical manner, through bar diagram, histogram, frequency polygon and pie chart;
- enumerates the key features of bar diagram, histogram, frequency polygon and pie chart;
- enlists the limitations of graphical representation of data;
- explains the difference between raw data and grouped data;
- describes the various types of grouping of the data;
- enumerates the relevant points to be kept in mind while graphically representing a data;
- draws a bar diagram,histogram frequency polygon and a pie chart for a frequency distribution; and
- explains the importance and limitations of graphically representing the data.

5.1 MEASURES OF CENTRAL TENDENCY

A Central tendency reflects the significance of the entire data by accurate calculation of the average, or the central score, for a set of scores.It is a representative value of a statistical series of data.The three measures of central tendency are explained as follows.

5.1.1 Mean

It is the simple average of all items in a series. Therefore it is calculated as the sum of all observations, divided by the number of observations. For example, Raghav scored 83, 90, 82, 87, 88, 92 on six tests. We will add the scores 83 + 90 + 82 + 87 + 88 + 92.This is equal to 522. Now,divide the sum,ie 522 ,by the number of observations,ie 6.

83+90+82+87+88+92=522

522/6=87

Therefore the mean is 87. You will note that the mean is very sensitive to extreme scores. If any score is extremely low or high the mean will also fall or rise respectively.The formula for mean is stated as follows:

$X=\Sigma F/N$

Where X =mean , ΣF= sum of all frequencies,and N is total number of entries

Let us take another example.

Neha was able to recall the following number of words, from the list of words shown in various languages.

Table 5.1.1

SUBJECT	NO. OF WORDS LEARNT
Hindi	20
Sanskrit	20
Bengali	18
English	18
Assamese	24

Thus, the average number of words recalled is calculated as follows:

Formula is $X=\Sigma F/N$

20+20+18+18+24=100

100/5=20

The average number of words recalled is 20.

The mean has the following characteristics

- It is simple and easy to understand.
- It is also easy to calculate.
- It takes all observations into consideration.
- It is affected very much by extreme values.
- The average of scores may not reflect whether the performance of a person has improved or declined.To understand this, the entire data needs to be viewed. For example, two students obtain the marks as follows in various tests.

	TEST 1	TEST 2	TEST3	TEST4	MEAN
Student A	30	49	55	70	51
Student B	68	54	52	30	51

It is observed that the average score of both students A and B is the same. But, we can see that student A's performance is improving whereas student B's performance is declining.

- The mean value may not figure in the series at all. In the above example the average score of 51 does not exist in any of the observations.

5.1.2 Median

Median is a measure of central tendency which reflects a score in a distribution that divides the distribution into half. It indicates the midpoint of an array of scores in a distribution. In a research study ,the number of hours of sleep of each student of the dormitory was noted.Refer to Table 5.1.2 given below.

Table 5.1.2a

Student's name	Number of hours of sleep
A	7
B	10

C	6
D	8
E	8
F	9
G	7
H	7
I	6
J	8

Arranging the scores in descending order we will get the following distribution.

Table 5.1.2b

Name of student	**Hours of sleep in descending order**
B	10
F	9
E	8
D	8
J >	8
G >	7
A	7
H	7
C	6
I	6

The median is calculated by adding the centre most values and dividing it by 2 (Hence we calculate median as 8+7=15,which is divided by 2).Thus the median is the score of 7.5 that divides the distribution into half. Here the number of entries is 10. Thus we

have the median lying between the 5th and the 6th entry.If we had data of only 9 students, the median value would be the 5th entry.Since 9 is an odd number,it becomes easy to calculate the median.

Activity 5.1.1

Draw and cut paper in the shape of squares of seven different sizes.Now arrange them in descending sizes , start by putting the largest on top ,then smaller, and the smallest at the bottom.Now try to locate the median.

Interesting fact about the median

You can quickly find the location of the median by using the expression n+1 divided by 2.

Median = n+1/2

The letter n is the total number of data values in the distribution. If n is an odd number, the median is the middle value of the ordered data (ordered smallest to largest).In the previous example if n=9 (which is an odd number),then the median value is 9+½ =10/2= 5th entry. If n is an even number, the median is equal to the two middle values added together and divided by two after the data has been ordered.

Let us take another example, the number of items recalled from the given list of words is as follows:

Table 5.1.3

Name of the person	**Number of words recalled**
M	18
N	24
O	22
P	30
Q	30
R	10

S	17
T	5
U	28

Arranging the scores from highest to lowest we get 22 as the median as shown in the table below:

Notes

Table 5.1.4

Name	**Words recalled**
P	30
Q	30
U	28
N	24
O >	22
M	18
S	17
R	10
T	5

The following are the characteristics of median.

- It is a simple measure of central tendency.
- It is not affected by extreme scores.
- It is easy to understand and calculate.
- It is possible to derive the median value even when the data is incomplete.
- In case of even numbers of observations, the median cannot be determined directly.

5.1.3 MODE

Mode is an important measure of central tendency.The mode has the highest frequency in the distribution.The literal meaning of the word 'mode' refers to something that is in vogue or fashion. Hence, it is determined by the maximum number of entries/scores. It is also a measure of reference and popularity.

ACTIVITY

Fill in the blanks with an approximate value.

a. Most women in your village/town have a height of ____________ cms .

b. ______ is the fruit that most of the people in your village like to eat.

c. The brand of mobile phones that most people bought is __________.

d. The most watched TV serial is _________.

e. The most worn colour of shoes is _____________.

Once you have filled these, you will have an understanding of the concept of mode.Forexample,as shown in the table below, the number of marks that 10 children get in Mathematics is 60,48, 50,60, 39 ,50 ,60, 27,60, 42. The mode will be 60, as the maximum number of children scored 60.

Table 5.1.5

Serial number	Name of child	Marks scored
1	Debjit	60
2	Arav	48
3	Raghu	50
4	Rekha	60
5	Namita	39
6	Taran	50
7	Nafeeza	60

8	Indra	27
9	Ramesh	60
10	Tanya	48

Now, you will note that the number of children scoring a particular marks is as follows:

Table 5.1.6

Marks	**Number of children scoring the particular marks**
27	1
39	1
48	2
50	2
60 (is the mode)	4

Characteristics of Mode

- It is easy to calculate the mode. Just by inspection we can know the mode.
- It is easy to understand.
- It is applied in our daily lives.
- It is not affected by extreme values.

ACTIVITY 5.1.3

Make ten paper cards.Choose any nine numbers.Write any of these numbers in bold on each of these 10 paper cards.You can repeat any one number, as you have only 9 numbers to be written on ten cards. Invite ten of your friends,siblings and/or cousins for this activity. Distribute the number card each to your friends and cousins. Now, let each person hold the number, so that it is visible to everyone. Play music and ask them to stand in descending order.Now find the mean, median and mode of the numbers that they are holding.

INTEXT QUESTIONS 5.1

1. State whether the following statements are True or False.

   a The mean ,median and mode can never be the same.

   b. When we calculate a student's average marks,we are calculating the mean.

   c. Any change in scores will change its mean value but may or may not change the mode.

   d. The mode can be known by mere inspection.

   e. The mean can be known by mere inspection.

2. 10 people from Areema's town walk to the old age home everyday to help the senior citizens of the town. The distance travelled by each person is shown in the following table . Calculate the value of the mean, median and mode of the distance travelled.

Person's name	**Distance walked in kms (To help the senior citizens in old age home)**
Ahmad	2
Bela	4
Celia	2
Deepak	3
Emily	3
Farida	2
Gauri	1
Hemant	3
Isha	3
Jasbir	3

5.2 REPRESENTATION OF DATA

In the previous module, you have learnt about the mean,median and mode.They are the measures of central tendencies. Understanding of measures of central tendencies also helps us in our day to day life situations.By knowing the average number of hours to be devoted to study and sleep one can not only make a plan,but also effectively follow it.This data can also be shown graphically. This module will explain how data can be shown in the form of a frequency distribution ,and further in a graphical or pictorial form.

5.2.1 Raw data and data grouping

Researchers collect data adopting various methods of research.Data refers to information in the form of numerical figures or a set of given facts.Data is collected by the researcher which is in an un-organised form. This is called raw data.This data needs to be organised and interpreted.The raw data needs to be divided into various classes/groups to enhance our understanding of the same.Itcan then be used for further algebraic and graphical representation.Items/scores are arranged into various groups/ classes in a tabular manner,on the basis of similarities.This condensed data helps to know the salient features of the data. You will now study various types of data grouping.

5.2.1.1 Individual Series

Individual series is in the form of collected data which is raw.For example , the number of trees planted by 5 students is 6,2,1, 3,4.Another example of individual series is as follows.

The marks of 10 students in Sanskrit are 92, 80, 70 ,88,75,60,55, 90,85 and 92 Thus,in an individual series items are listed singularly .Hence, the name 'individual series'.This can then be arranged in either ascending or descending order.When the number of items is large, this organisation of data is tedious and lengthy. Computers are a big aid in arranging large number of items in ascending or descending order for better understanding of data.

5.2.1.2 Discrete Series

When the frequency of observations is taken into consideration in order to organise

the data,a discrete series can be prepared. A frequency table that is prepared indicates the number of scores within each group. The number of occurrences of observations for each item is noted in the form of tally, and a frequency table is prepared. Discrete series is also known as a frequency table.In this there are no class intervals,and particular item in the series is numbered. Let us understand this through the following example:

20 students of class 12 secured the following marks

10 ,15, 10, 12 ,16 ,10 ,16 ,17 ,15, 17 ,18, 20,15 ,17,20, 20,15 ,17, 20,17 .The table below presents this data in the form of a frequency table. Items are arranged in a descending order.The tally bar represents every single entry.The frequency is noted in front of each item to signify the number of times that item occurs in the series.

Marks	Tally bars	Frequency
10	///	3
12	/	1
15	////	4
16	//	2
17	~~////~~	5
18	/	1
20	////	4

5.2.2 Frequency Distribution For Grouped Data

In this frequency distribution, data is classified into different classes with a range.This range determines the class interval. For example 0-5,6-10 etc.These are the class intervals in which all observations falling within the range are shown. Each item in the series is written against a particular class interval. The number of times an observation occurs is shown as frequency against the class interval. The following table offers an illustration of a frequency distribution with class intervals.For example:

Exposure to various social media sites influences a person's attitude towards physical activities like swimming,walkingetc.To know this a researcher noted the number of people aged 15 - 40 years who had facebook accounts. This is shown in Table 5.2.1 which is a frequency distribution.

Table 5.2.1 Frequency distribution for
Number of people on facebook in various age groups.

Class Interval	Frequency
Age in years	Number of people on facebook
15-20	12
20-25	38
25-30	34
30-35	10
35-40	6
Total	100

From the above table you can note that in the class interval 15-20,number of people on Facebook is 12,whereas the same is 38 for range 20-25 years.This shows that the maximum number of people using facebook 38,which is in age group 20 to 25 years old.The frequency (ie number of people having facebook account) can thus be clearly seen from this frequency distribution.This helps us in comparing the various age groups with respect to facebook accounts.

INTEXT QUESTIONS 5.2

1. State whether the following statements are True or False.

   a. Raw data is very meaningful.

   b. The data collected by the researcher is in a raw format.

   c. Raw data can be arranged in both ascending as well as descending order.

   d. Discrete series is also known as individual series.

2. Fill in the blanks.

   1. The number of times a particular observation occurs is known as its ______________.

2. ___________ is the group into which raw data is arranged .It consists of the lower limit and the upper limit of the class .

5.2.3 GRAPHICAL REPRESENTATION OF DATA

A frequency distribution can be represented by means of lines,curves or bars on a graph. This is a widely used technique to represent memory, learning, intelligence and many more psychological concepts and relationships.The two axis, i.e. X and Y axis are perpendicular to each other.Showing the frequency against the scores on the graph makes the data meaningful and simple to understand. Just by looking at the graph,the meaning of the observations is clear. Graphical representation acts as a visual aid and the image can be recalled with comparative ease .It also facilitates the comparison of two or more frequency distributions.

Some relevant points to be kept in mind while constructing a graph are as follows:

- The heading should be precise and suitable and should explain the nature of information presented in the graph.
- The points should be plotted from left to right on the X-axis ,and upwards from bottom to top on the Y-axis.

Some of the important types of graphical representation are considered below.

5.2.3.1 Bar Diagram

These are columns or rectangles which represent the data,or the value of the variable, in the form of bars.The following should be kept in mind while presenting the bar diagram

- A bar diagram is drawn on an X and Y axis.
- The length or height of the bars is drawn in accordance to the value of the variable. However,the breadth of each bar remains the same.
- Bars can be both vertical or horizontal. However, they are usually used in the vertical form. Bars should be equidistant from each other.
- The bars may be shaded to make them more attractive.
- Two or more sets of data may be shown in a bar diagram simultaneously. This is known as a multiple bar diagram.

Notes

For example

The following frequency distribution can be represented through a bar graph in the following manner.

Table 5.2.2 Frequency distribution for
Number of people on facebook in various age groups.

Class Interval	Frequency
Age in years	Number of people on facebook
15-20	12
20-25	38
25-30	34
30-35	10
35-40	6
Total	100

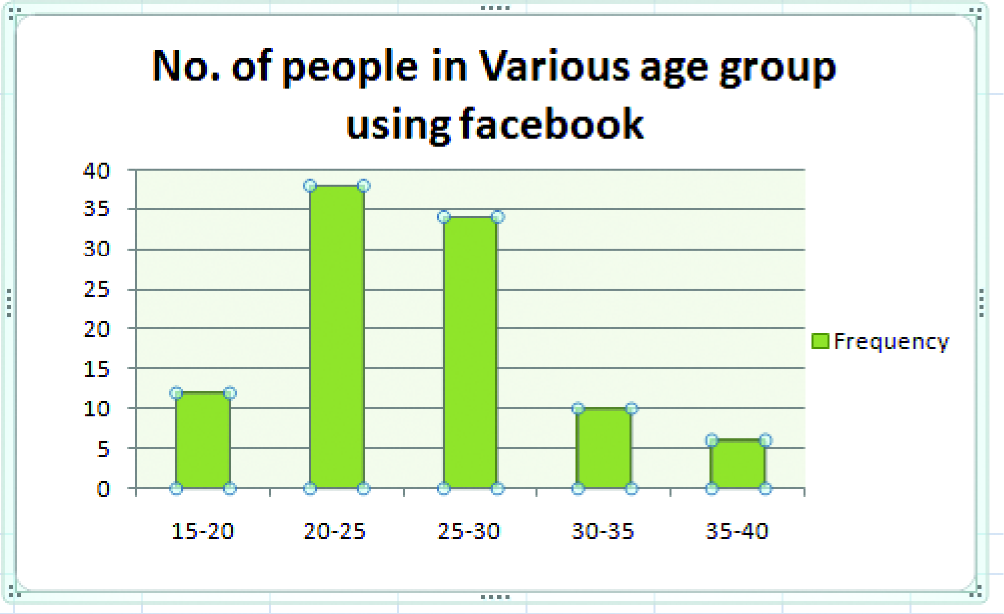


Fig 5.1 : Bar diagram showing no. of people in various age groups using facebook

INTEXT QUESTIONS 5.4

1. State whether the following statements are True or False.

   a. The height of bars in a bar diagram need not be equal .

   b. When more than two sets of data is to be presented simultaneously we use the multiple bar diagram.

2. Choose the correct option from the options given below and fill in the blanks.

   i. A bar diagram is __________.

      a. a one-dimensional diagram.

      b. a two dimensional diagram .

      c. a diagram with no dimension.

      d. none of the above

   ii. Bars in a bar diagram can be __________.

      a. vertical or horizontal

      b. only drawn as lines

      c. only horizontal

      d. only vertical

5.2.3.2 Histogram

A histogram represents a grouped or classified data. The X- axis represents the class limits, or the class boundaries. The Y-axis shows the frequencies. The columns or rectangles are drawn by taking the X-axis as the base and the Y-axis to represent the height ,ie frequencies.

A linkmark (~~~~)may be drawn on the X axis ,to show the continuity. (when there is a gap between 0 and the first class interval) The rectangles may be shaded to give a clear understanding to the histogram. The breadth in a histogram is not arbitrary, it is determined by the class size. If the class intervals are discontinuous, they have to be changed to continuous form for a histogram to be drawn.The following frequency distribution of IQ of 30 students is followed by aHistogram representing this data.

Class interval	Frequency
20-40	1
40-60	3
60-80	4
80-100	10
100-120	10
120-140	2

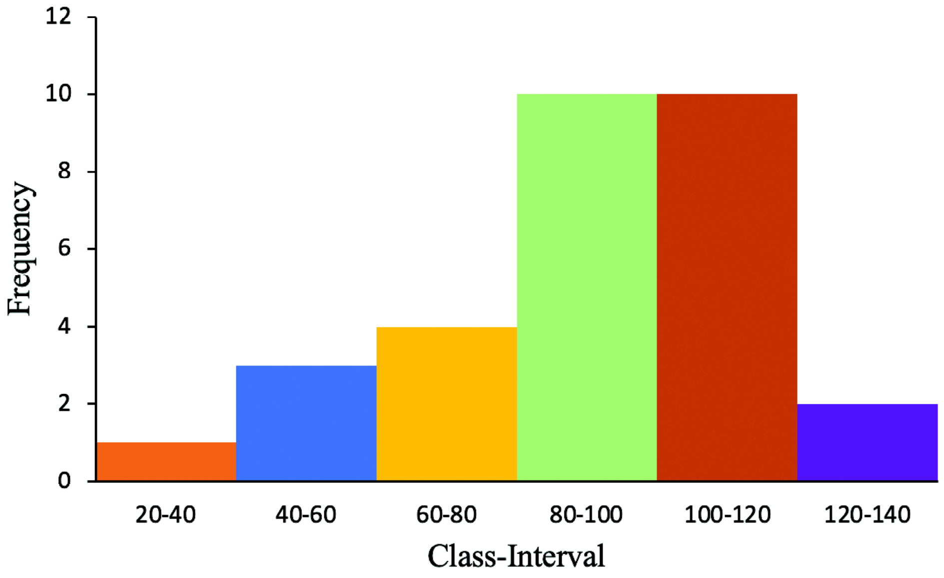


Fig 5.2 : Histogram showing marks distribution of students

5.2.3.3 Frequency Polygon

In a frequency polygon the midpoints of the class intervals are calculated and shown on the X axis.The frequencies are shown on the Y-axis .After plotting the points on the graph, they are joined by straight line segments. Both sides of the frequency polygon are extended to meet the X-axis.

Consider the following example

The following frequency distribution of marks of various students is further represented through a Frequency Polygon by joining the mid points.

Marks	Number of students
10-20	2
20-30	5
30-40	9
40-50	8
50-60	9
60-70	10
70-80	7

We will first mark the mid points of the class interval.

(Class Interval)

Marks	Mid point	Number of students
10-20	15	2
20-30	25	5
30-40	35	9
40-50	45	8
50-60	55	9
60-70	65	10
70-80	75	7

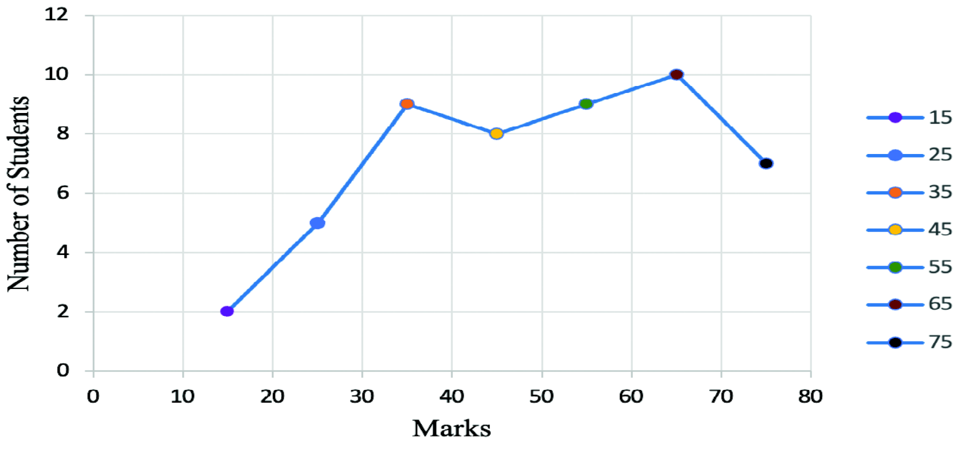


Fig 5.3 : Frequency polygon showing marks distribution of students

INTEXT QUESTIONS 5.5

Choose the correct option and fill in the blanks.

(i) The breadth of columns in a histogram is determined by ________________.

a. frequency

b. frequency distribution

c. class size

d. all of the above

(ii) In order to draw a histogram the class interval should be…………..

a. Large

b. Continuous

c. Discontinuous

d. None of the above

(iii) In a histogram the frequency is shown as

a. a circle

b. a line

c. a curve

d. None of the above

(iv) In a ________________ the mid points of the class intervals are considered.

a. Bar diagram

b. Histogram

c. Frequency polygon

d. None of the above

(v) In order to draw a frequency polygon,_________

a. a histogram should be drawn.

b. a bar diagram should be drawn.

c. Both, histogram and bar diagram, should be drawn.

d. No other diagram is required.

5.2.3.4 Pie Chart

Pie chart reflects the percentage of frequencies in a particular class interval or a group. A circle is made up of four right angles and is measured as 360°. This 360 degree is also a representation of aggregate of all frequencies.In accordance with the percentage of total frequency each segment of the circle is marked. The pie chart does not show absolute values,it shows percentages.

The steps can be understood from the example below.

There are 40 children in a class .Their interest in various activities is as follows

Area of interest	**Frequency (Absolute value)**
Music	4
Painting	6
Theatre	8
Sports	16
Poetry	6

Now,the absolute values will be converted to percentage,which is further converted to degrees,to mark the required segment.

Interest	**Frequency (Absolute Value)**	**Value (percentage)**	**Value (degree)**
Music	4	10	36
Painting	6	15	54
Theatre	8	20	72
Sports	16	40	144
Poetry	6	15	54

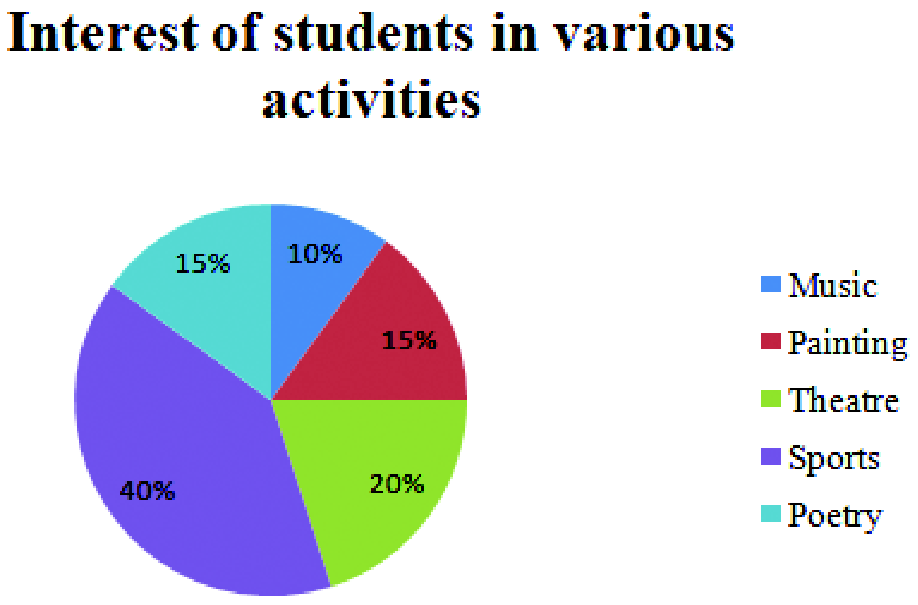


Fig 5.4 : Pie chart showing interest areas of students

Step 1

The absolute values are converted to percentage.Foreg,from the table it is observed that four children ,from a class of 40 children, like music.This means that 4 upon 40 into 100 is equal to 10% of children like music.Similar calculation is done for all areas of interest.

Step 2

Draw a circle and from the centre point draw perpendicular to find the value of percent score from 360 degree (ie total frequency).We will divide the persons score from hundred and multiply with 360.Thus, 10 children are interested in music which makes it 10 upon hundred into 360 is equal to 36 degrees .

A similar calculation will be done for all domains.

Step 3

Each value in terms of degree is shown on the circle. Hence from the pie chart each component is clearly visible. It can be observed that sports is of interest to 40% percent children,poetry to 15% and music is liked by only 10% of the children.The area in the circle represents each area of interest,in the right proportion.

Notes

Limitations of graphical representation

- A small change in the scale of a graph can lead to a lot of difference in structure of the graph.Therefore ,a wrong meaning is attributed to the graph.
- Actual values are mostly not clear from the graph. They just give a general tendency of the scores.
- Sometimes the graphical representation is difficult to comprehend. A layman is most likely to misinterpret it.

INTEXT QUESTIONS 5.6

(i) A pie chart depicts the data as a proportional part of a .... (Fill in the blank).

(ii) The largest part on the pie chart reflects the minimum frequency.(State whether True or False).

WHAT YOU HAVE LEARNT

Measures of Central Tendency
A Central tendency reflects the significance of the entire data by accurate calculation of the average, or the central score, for a set of scores. It is a representative value of a statistical series of data.

Mean
It is the simple average of all items in a series. Therefore it is calculated as the sum of all observations, divided by the number of observations

Median
Median is a measure of central tendency which reflects a score in a distribution that divides the distribution into half. It indicates the midpoint of an array of scores in a distribution

Mode
The mode has the highest frequency in the distribution. The literal meaning of the word 'mode' refers to something that is in vogue or fashion. Hence, it is determined by the maximum number of entry scores. It is also a measure of reference and popularity.

TERMINAL QUESTIONS

1. Data indicating the number of months a person spends on tours, while holding a job is as follows:

   3;15; 16; 4;11; 12; 13

   15;16;2;6;4;13;8;11;15,16;6;7

   Calculate the mean,median and mode from the above data.

2. An aptitude test was conducted for 10 students. The scores on mathematical comprehension were as follows :

   10,8,6,12,8,x,2x, 2,5,7. The mean of the scores is 7. Find the value of x and 2x. Also find the median and mode of the data.

3. By the end of 2021, Facebook had many users in India.The following table shows the number of users in different age groups in a town. Construct a bar graph and pie chart using the following data.

Age groups	Number of Facebook users
0-10	0
10-20	100
20-30	95
30-40	80
40+50	75
50-60	42

4. Twenty-five students who were randomly selected were asked the approximate number of movies they watched every month. The results were as follows.

Number of movies	Frequency(number of people)
0-1	5
1-2	8
2-3	6
3-4	3
4-5	1
5-6	2

Draw a frequency polygon and histogram of the above data.

5. The people who visit the neighbouring park are mostly infants, children, college students, working adults, and retirees. The distribution shows the five age groups and the number of people in the park from each age group. Construct a pie chart showing the proportions.

Age groups	Number of people
Infants	22
Children	34
College students	10
Working-age adults	8
Retirees	26

6. What are the important things to keep in mind while presenting a bar diagram?

7. What is a frequency distribution for grouped data and how is it classified into different classes?

8. What is the formula for calculating the mean of a statistical series of data?

9. What are the characteristics of the median as a measure of central tendency? How the median is affected by extreme scores and is it possible to determine the median when the data is incomplete?

10. What are the characteristics of mode as a measure of central tendency and why is it important?

ANSWERS TO INTEXT QUESTIONS

5.1

a. False

b. True

c. True

d. True

e. False

5.2

Mean = 2.6 Median = 3 Mode= 3

5.2.1

a. False

b. True

c. True

d. False

5.2.2

a. frequency

b. Class interval

5.2.3

a. True

b. True

5.2.4

i. a. one dimensional diagram

ii. a. vertical or horizontal

5.2.5

i. c. class size

ii. b. continuous

iii. d. none of the above

iv. c. frequency polygon

v. d. No other diagram is required.

5.2.6.

i. Circle ii. False

MODULE -2

Basic Psychological Processes

To make the learners aware about how information gathered through different sense modalities influences attention and perception, and the laws that govern these processes. The learners will also become aware of how learning and memorisation take place and the influences on these underlying processes. The learners will understand how and why forgetting takes place, along with techniques of enhancing memory. The students will become aware of motivation as extrinsic and intrinsic and how different needs and aspirations the process of achievement and effort. They will also understand how emotions facilitate our well being and will learn to mange emotions better. This module will introduce them to thinking processes and the role of language.

6. Attention and Perceptual Processes
7. Learning
8. Human Memory
9. Motivation
10. Emotions
11. Thinking and Problem

6

ATTENTION AND PERCEPTUAL PROCESSES

Remember the first time you went to a movie hall? What did you experience when you entered the hall? Did you enjoy watching all the images, light and sound being flashed on the screen before you? Did you wonder how you could feel, see and experience everything which was not actually there?

This is an activity for you to understand yourself

1. Think how far away a candle should be for you to see its flame on a clear, dark night?
2. How much salt you would need to add to 500 liters of water so that you can taste it?
3. In an average three-room home, how much room freshener will be needed to diffuse through?
4. How far should you stand to be able to hear the ticking of a clock in very quiet conditions? (answers given at the end of the chapter)
5. What kind of visual cues do we need to judge distance and depth?
6. How can TV commercials inspire you to buy the product? What makes the advertisement so appealing?

LEARNING OUTCOMES

After studying this lesson, learner :

- describes attention, sensation and perception;

- differentiates between laws of perceptual organization;
- applies cues of depth perception in the real world; and
- identifies what are illusions and understand what is Extra Sensory Perception.

You must have read about the sense organs and how sensations are received by the body. These sensations are like the window to the outside world- receiving information continuously. However, all sensations are not attended all the time. As you walk down the road there are different stimuli which arouse different sensations- like the aroma of a hot samosa or the sight of a colourful kite in the air or even the feel of the wind in your face and maybe the voices of the vendors calling out to sell their wares. All these stimuli are impinging upon different sense receptors but it is only few that we actually pay 'attention' to. How do we distinguish between good and not so good wares, aromas or colours? Some people like one set of colours, others do not – so what is it that makes us 'percieve' the stimuli that we receive? We need to understand this process, called Perception. Our perceptual processes are the tools that we use to understand the innumerable sensations which we experience all the time.

6.1 WHAT IS ATTENTION?

As you watch the Republic Day parade or remember your physical training sessions at school, the first thing you are taught to respond to is 'Attention'!

The moment this command is used, we become attentive- which is a state of vigilance, alertness and focus – when you 'ready' yourself. Thus the process through which you pick up certain stimuli from a group of others is generally referred to as attention. It is a central process and perception may not take place if you do not attend to the stimuli. Thus, attention precedes perception. The process of attention helps organize perceptions and other cognitive functions. The functions of attention include:

1. **Alerting Function:** In this state there is a complete physiological and mental preparedness. For example- when waiting for orders, the parade waits for further instructions from the platoon commander.

2. **Selective Function:** Here one selects the object of attention. It may be noted that it is not possible to pay attention to more than one thing at a time. Can we attend to more than one thing at a time?

   In everyday life we seem to attend to several things at the same time. You may have seen people driving a car and talking to a friend or attending to phone calls on a mobile while listening to music. If you notice there is more effort to driving

than to other activities, even though some attention is given to other activities. It means that sometimes attention can be given to more than one thing; However, this happens only *with highly practiced activities*, because one activity then becomes almost automatic and does not require so much attention. This process is then called **automatic processing** which has three main characteristics.

(i) It occurs without intention,

(ii) It takes place unconsciously, and

(iii) It involves very little (or no) thought processes (e.g., we can read words or tie our shoelaces without giving any thought to these activities).

3. **Limited Capacity:** There is only a selected number of articles or stimuli that one can attend to. For example, you see so many things on the class blackboard but you choose to notice or pay attention to only few.

4. **Vigilance:** Paying attention to a task continuously, for a long time, like looking at a screen at the ATC (Air Traffic Control), is called vigilance or sustained attention. It has been found that attending to a task for long is taxing, particularly if the task is monotonous and it can lead to decrease in performance.

HOW DO YOU

Explain The Nature Of Attention?

Attention has a focus as well as a fringe.

When the field of awareness is centred on a particular object or event, it is called focus or the focal point of attention. But when the objects or events are away from the centre of awareness and one is only aware of them in the periphery-they are said to be at the fringe of attention.

Eg stare at- **E**

Now you notice what else is surrounding this alphabet- edge of the paper, desk, or those in the back ground….

6.1.1 Classification of Attention

Attention has been classified in a number of ways. A process-oriented view divides it into two types, namely *selective* and *sustained*.

Selective Attention

Selective attention is concerned mainly with the selection of a limited number of stimuli or objects from a large number of stimuli. It means that at any moment we focus our awareness only on a limited aspect of all that we are capable of experiencing. Example listening to a class teacher over other sounds coming in through the corridor. You block information coming from periphery(fringe).

Another example of selective attention is to attend to only one voice amongst many. While talking to a group of people at a party, if someone in the far corner of the room utters your name in a conversation, you are still able to attend to it even though you are not engaged in that conversation. This is called cocktail party effect, a term that was coined by the English cognitive scientist Colin Cherry in 1953, and refers to our ability to focus our attention on a particular person's voice amongst other voices and background noise.

Since our perceptual system has a limited capacity to receive and process information, it can deal only with a few stimuli at a given moment of time. Which of these stimuli will get selected and processed? Psychologists have identified a number of factors that determine the selection of stimuli.

Sustained Attention

While selective attention is mainly concerned with the selection of stimuli, sustained attention is concerned with concentration. It refers to our ability to maintain attention on an object or event for longer durations. It is also known as "vigilance" as discussed above. Sometimes people have to concentrate on a particular task for many hours. Air traffic controllers and radar readers provide us with good examples of this phenomenon. They have to constantly watch and monitor signals on screens. The occurrence of signals in such situations is usually unpredictable, and errors in detecting signals may be fatal. Hence, a great deal of vigilance is required in those situations.

INTEXT QUESTIONS 6.1

1. The process of selection of few/certain stimuli over the others is called___
2. ____ _____in this state there is a complete physiological and mental preparedness to receive information.
3. Nature of attention includes ____ and ___.

4. There are two types of attention____ and ___.

5. The term ____ ____ ____was coined by the English scientist Colin Cherry in 1953.

You must be thinking why we pay attention to some stimuli and not to others. These are the factors which we will discuss now.

6.1.2 Factors Affecting Selective Attention

Several factors influence selective attention. They are generally classified as "**external**" and "**internal**" factors.

External factors / Outer / Physical factors

These factors are determined by the features of stimuli so they are called external factors. Other things held constant, the **size**, **intensity**, and **motion** of stimuli appear to be important determinants of the selection of stimuli to which we attend to.. Large, bright, and moving stimuli easily catch our attention. Stimuli, which are **novel** and moderately **complex**, also easily get into our focus. Studies indicate that **human photographs** are more likely to be attended to than the photographs of inanimate objects. Similarly, **rhythmic auditory stimuli** are more readily attended to than verbal narrations. **Sudden and intense** stimuli have a wonderful capacity to draw attention. These factors pertain to particular aspects of objects which are inherent in objects also called objective factors.

a. Movement

A moving object draws our attention more easily than a stationary object. For example, flickering lights draw our attention morethan non-flickering lights. Ambulance, police cars, fire brigades use flickering and flashing lights to attract attention.

b. Intensity

More intense light, sound or smell draws our attention easily than the less intense one. For example, a neon sign is noticed more than a normal intensity light, or a very loud sound is noticed more over a normal sound.

c. Novelty

New kinds of objects draw our attention quickly. Advertising agencies adopt

this technique very effectively, for example, by adding the latest and new features to a phone, fridge, fan or cooler or air-conditioners.

d. Size

A bigger or a smaller object draws attention of people very easily than an average sized object. For example, a small advertisement on a full page will draw more attention or a big hoarding or banner.

e. Change

Any change in our environment draws our attention quickly. For example, regular sound of a moving clock does not draw our attention, but the movement it stops, our attention is drawn to it,a radio playing songs stopping due to electricity failure draws our attention.

f. Repetition

When a stimulus is presented repeatedly our attention is drawn, for example, repeated horn of a fire brigade or ambulance, jingles in advertisements.

g. Clarity

An object or sound which can be experienced clearly draws our attention more than the stimuli which are not clear. For example, the shrill sound of a siren on the road always draws our attention.

h. Colours

Colourful objects draw our attention more easily than black or white objects. Advertisers use this continuously by showcasing bright colours.

i. Contrast

An object that is strikingly different from its background draws our attention. For example: Stains of curry or ink on a white shirt.

Internal Factors / Psychological Factors

These are the factors that lie within the individual. They are dependent on the need, interest and emotion of the person.

a. Need

A need would be related to our biological or psychosocial needs. When we are hungry, we notice even a faint smell of food or when we are hot and thirsty our

attention is drawn towards water or a cold beverage. For example, a student taking an examination is likely to focus on the teacher's instructions more than other students.

b. Interest

Objects or events, which appear interesting, are readily attended to by individuals. For example, whilst shopping a sportsperson will be attracted towards display windows wherein sports goods are placed, whereas an MS Dhoni fan will immediately pay attention to his match if it is playing on television.

c. Emotional state

Attention is affected during an emotional state. For example, when a person is highly excited at a jubilant event, he or she is not aware of others in the vicinity; may not listen or understand what others say.

INTEXT QUESTIONS 6.2

Complete the sentences given below

1. Internal factors of attention are also called___ factors.
2. The internal factors that can draw our attention are:___, ____ and_____.
3. During festivals the movement of lights on shops is an example of__ factor of attention.
4. If we suddenly pay attention to the electricity when there is a sudden power breakdown, it is an example. of_____ factor of attention.

ACTIVITY

Identify any two settings/events in your surrounding which would qualify as sustained and selective attention.

6.2 UNDERSTANDING THE ROLE OF SENSATION IN PERCEPTION

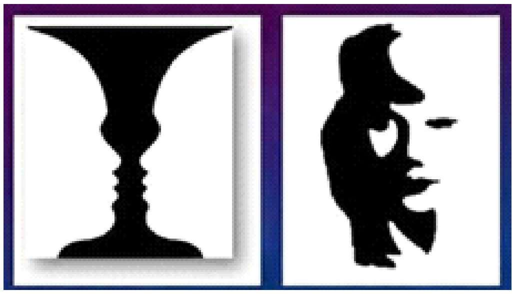
Sensation is the activation of sensory receptors by environmental stimuli.

To consider how psychologists understand the senses, and more broadly, sensation and perception, we need to define the two: sensation is the activation of the sense

organs by a source of physical energy while perception is the organisation, interpretation, analysis, and integration of stimuli carried out by the sense organs and brain.

The process by which we recognise, interpret or give meaning to the information provided by sense organs is called perception.

The processes involved in transforming sensation to perception is called 'Transduction'.



In this process the stimulus energy (e.g., light, sound or fragrance) is converted into neural energy.

Perception is a constructive process as we go beyond the stimulus and try to find meaning in it. While interpreting stimuli or events, individuals often construct them in their own ways based on their previous experiences, their needs and emotionsPerception is thus not merely an interpretation of objects or events of the external or internal world as they exist; instead it is also a construction of those objects and events from one's own point of view.

What Makes Us Perceive Our World In A Meaningful Form?

The process of organising visual field into meaningful wholes is known as **form perception.** Several psychologists have tried to answer this question, but the most widely accepted answer has been given by a group of researchers called Gestalt psychologists.

6.2.1 Laws of Perceptual Organization

Some of the most basic perceptual processes can be described by a series of principles that focus on the ways we organize bits and pieces of information into meaningful wholes.

Known as **Gestalt laws of Organization**, these principles were put forth in the early 1900s by a group of German psychologists who studied patterns, or gestalts. Prominent among them are Köhler, Koffka, and Wertheimer. Gestalt means a regular figure or a form. According to Gestalt psychologists, we perceive different stimuli not as discrete elements, but as an organised "whole" that carries a definite form.

The Gestalt psychologists also indicate that the cerebral processes are always oriented

towards the perception of a **good figure or pragnanz**. That is the reason why we perceive everything in an organised form.

The most primitive organisation which takes place in the form of **figure-ground segregations** can be seen in the given pictures.

Apart from Figure and Ground a number of other principles are found to be valid for visual (as well as auditory) stimuli as can be seen in the figure below, namely: closure, proximity, similarity, continuity and symmetry.

6.2.2 Principles of Perceptual Organisation

Proximity: Objects that are close together in space or time are perceived as belonging together or as a group.

Similarity: Objects that are similar to one another and have similar characteristics are perceived as a group. In the given figure the little circles and squares are placed close together yet we tend to perceive squares and circles independently.

Continuity: This principle states that we tend to perceive objects as belonging together if they appear to form a continuous pattern. For instance, we are more likely to view the lines crossing over.

Symmetry: This principle suggests that symmetrical areas tend to be seen as figures against asymmetrical backgrounds.

Closure: We tend to fill the gaps and perceive the objects as whole rather than their separate parts. The small angles are seen as a triangle due to our tendency to fill the gaps in the object provided.

INTEXT QUESTIONS 6.3

Match the correct statements:

1.	We perceive objects as whole rather than their parts.	A.	Proximity
2.	We are more likely to view the lines crossing over instead of independent subsets.	B.	Closure
3.	Objects similar to one another and have similar characteristics are perceived as a group.	C.	Symmetry

4. Objects that are close together in space are perceived as belonging together or as a group. D. Continuity

5. Symmetrical areas tend to be seen as figures against asymmetrical backgrounds. E. Similarity

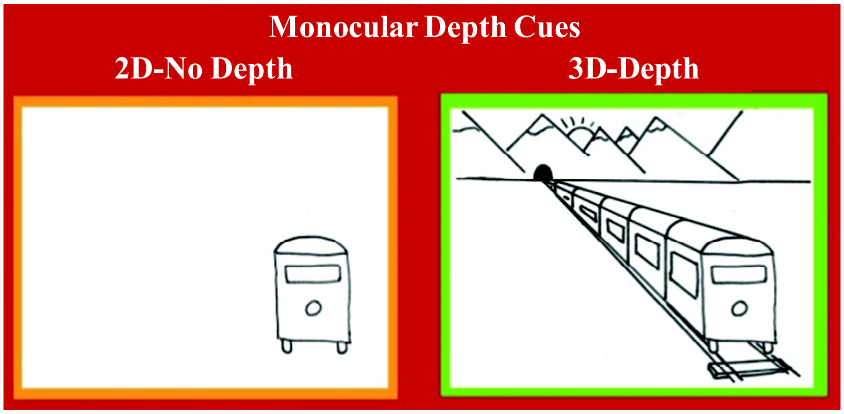
6.2.3 Depth Perception

The visual field or surface where things exist is called space. The space in which we live is organised in three dimensions. We perceive not only the spatial attributes (e.g., size, shape, direction) of various objects, but also the distance between the objects found in this space. While the images of objects projected on to our retina are flat and two dimensional (left, right, up, down), we still perceive three dimensions in the space. Why does it happen so?

The process of viewing the world in three dimensions is called **distance or depth perception**. Depth perception is important in our daily life. In perceiving depth, we depend on two main sources of information, called cues. One is called ***binocular cues*** because they require both eyes. Another is called ***monocular cues***, because they allow us to perceive depth with just one eye.

Monocular Cues (Psychological Cues)

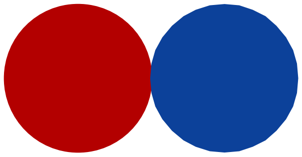
Monocular cues of depth perception are effective when the objects are viewed with only one eye. These cues are often used by artists to induce depth in two dimensional paintings. Hence, they are also known as pictorial cues.



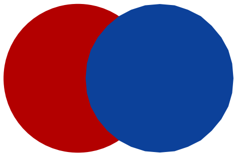
Relative Size: The size of retinal image allows us to judge distance based on our past and present experience with similar objects. As the objects get away, the retinal image

becomes smaller and smaller. We tend to perceive an object farther away when it appears small, and closer when it appears bigger.

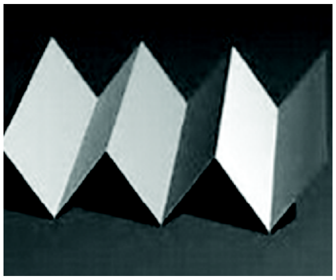
Interposition Or Overlapping: These cues occur when some portion of the object is covered by another object. The overlapped object is considered farther away, while the object that covers it appears closer.



Two objects side by side have no depth



Two objects that overlap add depth even though the objects represented here are in fact two-dimensional



Linear Perspective: This reflects a phenomenon by which distant objects appear to be closer together than the nearer objects. For example, parallel lines, such as rail tracks, appear to converge with increasing distance with a vanishing point at the horizon. The more the lines converge, the farther away they appear.

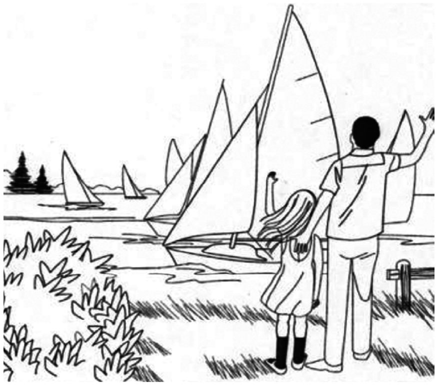
Aerial Perspective: The air contains microscopic particles of dust and moisture that make distant objects look hazy or blurry. This effect is called aerial perspective. For example, distant mountains appear blue due to the scattering of blue light in the

atmosphere, whereas the same mountains are perceived to be closer when the atmosphere is clear.

Light and Shade: In the light some parts of the object get highlighted, whereas some parts become darker. Highlights and shadows provide us with information about an object's distance and depth.

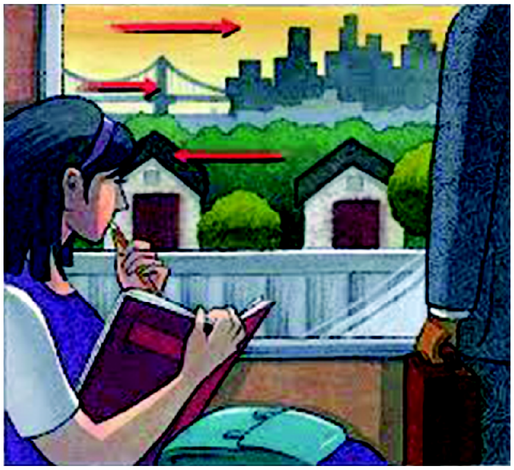
Relative Height: Larger objects are perceived as being closer to the viewer and smaller objects as being farther away. When we expect two objects to be the same size and they are not, the larger of the two will appear closer and the smaller will appear farther away.

Texture Gradient: It represents a phenomenon by which the visual field having more density of elements is seen farther away.



Motion Parallax: It is a kinetic monocular cue, and hence not considered as a pictorial cue. It occurs when objects at different distances move at a different relative speed. The distant objects appear to move slowly than the objects nearby. The rate of an object's movement provides a cue to its distance. For example-while traveling in a

bus, objects that are closer move "against" the direction of the bus, whereas objects that are further away move in the same direction as the bus.



Binocular Cues (Physiological Cues)

Some important cues to depth perception in three dimensional spaces are provided by both the eyes. Three of these are:

Retinal Or Binocular Disparity: Retinal disparity occurs because the two eyes have different locations in our head. They are separated from each other horizontally by a distance of about 6.5 centimetres. Because of this distance, the image formed on the retina of each eye of the same object is slightly different. This difference between the two images is called retinal disparity. The brain interprets a large retinal disparity to mean a close object and a small retinal disparity to mean a distant object, as the disparity is less for distant objects and more for the near objects.

Convergence: When we see a nearby object our eyes converge inward in order to bring the image on the fovea of each eye. A group of muscles send messages to the brain regarding the degree to which eyes are turning inward, and these messages are interpreted as cues to the perception of depth. The degree of convergence decreases as the object moves further away from the observer. You can experience convergence by holding a finger in front of your nose and slowly bringing it closer. The more your eyes turn inward or converge, the nearer the object appears in space.

Accommodation: Accommodation refers to a process by which we focus the image on the retina with the help of ciliary muscle. These muscles change the thickness of the lens of the eye. If the object gets away (more than 2 meters), the muscle is relaxed but as the object moves nearer, the muscle contracts and the thickness of the lens increases. The degree of contraction of the muscle is sent to the brain, which provides the cue for distance.

INTEXT QUESTIONS 6.4

Answer true or false:-

1. Depth perception is the ability tosee the world in three dimensions.
2. There are two types of cues for depth perception: overt and covert.
3. Other names for the two types of cues are physiological and psychological cues.
4. We perceive the world in three dimensions even though the sensation is in two dimensions.

ACTIVITY

Draw a scenery to show at least three cues of depth perception.

6.3 PERCEPTUAL CONSTANCY

What happens as you say bye to a friend and the person begins to walk away from you. As you watch the person, the image on your retina becomes smaller and smaller. Do you wonder why the individual is shrinking? No never. Despite the change in the size of the retinal image, perceptual constancy allows you to think that your friend is moving farther away from you. Perceptual constancy is a phenomenon in which physical objects are perceived as unvarying and consistent despite changes in their appearance or in the physical environment. Perceptual constancy leads us to view objects as having an unvarying size, shape, color, and brightness, even if the image on our retina varies. For example, despite the varying images on the retina as aircraft approaches, flies overhead, and disappears, we do not perceive the airplane as changing in shape.

Perception of the objects as relatively stable in spite of changes in the stimulation of sensory receptors is called perceptual constancy.

1. Size Constancy

The size of an image on our retina changes with the change in the distance of the object from the eye. The further away it is, the smaller the image is. On the other hand, our experience shows that within limits the object appears to be about the same size irrespective of its distance. For example, when you approach your

friend from a distance, your perception of the friend's size does not change much despite the fact that the retinal image (image on retina) becomes larger. This tendency for the perceived size of objects to remain relatively unchanged with changes in their distance from the observer and the size of the retinal image is called size constancy.

2. Shape Constancy

In our perceptions the shapes of familiar objects remain unchanged despite changes in the pattern of retinal image resulting from differences in their orientation. For example, a dinner plate looks the same shape whether the image that it casts on the retina is a circle, or an ellipse, or roughly a short line (if the plate is viewed from edge). It is also called form constancy.

3. Brightness Constancy

Visual objects not only appear constant in their shape and size, they also appear constant in their degree of whiteness, greyness, or blackness even though the amount of physical energy reflected from them changes considerably. In other words, our experience of brightness does not change in spite of the changes in the amount of reflected light reaching our eyes. The tendency to maintain apparent brightness constant under different amount of illumination is called brightness constancy. For example, surface of a paper which appears white in the sunlight, is still perceived as white in the room light. Similarly, coal that looks black in the sun also looks black in room light.

INTEXT QUESTIONS 6.5

Answer with one- two words:-

1. Why does our experience of brightness not change despite changes in the amount of reflected light reaching our eyes?

2. The image of a coin looks different from every angle, yet we perceive it as flat and round. Why does it happen? Give reasons.

3. A red apple looks the same bright red even if it is in a dark room; what is the psychological phenomenon behind it?

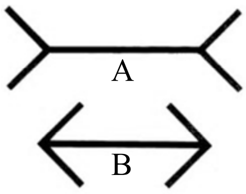
6.4 ILLUSIONS

Sometime we are unable to interpret the sensory information correctly. This results in a mismatch between the physical stimulus and its perception. **These misperceptions resulting from misinterpretation of information received by our sensory organs are generally known as illusions.** Illusions can be experienced by the stimulation of any of our senses. Psychologists have studied visual illusions more commonly than other sense modalities. Some perceptual illusions are ***universal*** and found in all individuals. For example, the rail tracks appear to be converging to all of us. These illusions are called universal illusions or permanent illusions as they do not change with experience or practice.

Some other illusions seem to vary from individual to individual; these are called ***personal illusions*.**

1. The Muller-Lyer Illusion

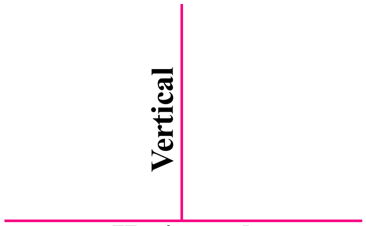
Line A is perceived as shorter than line B, although both the lines are equal. This illusion is experienced even by children and some studies suggest that even animals experience this.



Notes

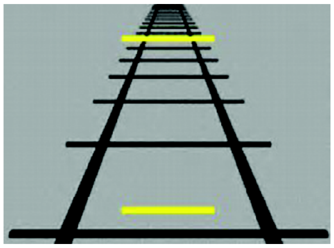
2. **Illusion Of Vertical and Horizontal Lines**

Although both the lines are equal, we perceive the vertical line as longer than the horizontal line.



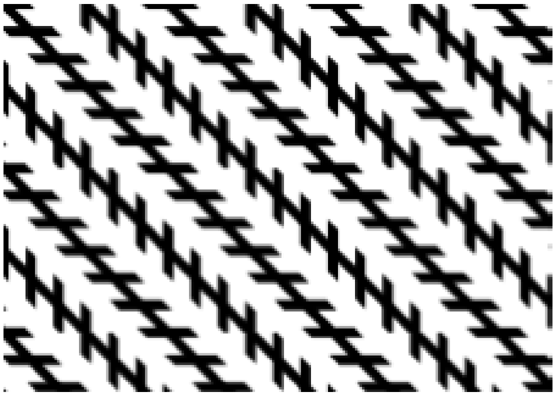
3. **Ponzo Illusion**

The Ponzo illusion is a geometrical-optical illusion that was first demonstrated by the Italian psychologist Mario Ponzo in 1911. He suggested that the human mind judges an object's size based on its background. He showed this by drawing two identical lines across a pair of converging lines, similar to railway tracks. The upper line looks longer because we interpret the converging sides according to linear perspective as parallel lines receding into the distance. In this context, we interpret the upper line as though it were farther away, so we see it as longer – a farther object would have to be longer than a nearer one for both to produce retinal images of the same size.



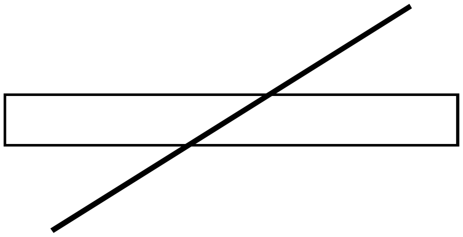
4. **The Zöllner Illusion**

The Zöllner Illusion was created by Johann Karl Friedrich Zöllner (1834 - 1882), a German astrophysicist with a keen interest in optical illusions. Zöllner was inspired by a cloth pattern that he observed in his father's factory, and first published the illusion in the journal *Annalen der Physik* in 1860. The Zöllner Illusion is one among a number of illusions where a central aspect of a simple line image – e.g. the length, straightness, or parallelism of lines – appears distorted in virtue of other aspects of the image – e.g. other background/foreground lines, or other intersecting shapes. These are sometimes called 'geometrical-optical illusions'



5. The Poggendorff Illusion

It is named after Johann Poggendorff (1796-1877), a German physicist who first described it in 1860. Poggendorff noted that the diagonal lines in the pattern of fabric appeared to be misaligned.



6. Apparent Movement Illusion

This illusion is experienced when some motionless pictures are projected one after another at an appropriate rate. This illusion is referred to as "phi-phenomenon". When we see moving pictures in a cinema show, we are influenced by this kind of illusion. The succession of flickering electrical lights also generates this illusion. For the experience of this illusion, Max Wertheimer had reported the presence of appropriate level of brightness, size, spatial gap, and temporal contiguity of different lights.

INTEXT QUESTIONS 6.6

Fill in the gaps:

1. Some perceptual illusions are _____ and found in all individuals. For example, the rail tracks appear to be converging to all of us.

2. Some other illusions seem to vary from individual to individual; these are called ______ ***illusions.***

3. When we see moving pictures in a cinema show, we are influenced by this kind of illusion. This is called the ___- ____.

ACTIVITY

Draw two parallel lines of exactly the same length. Put an arrowhead on one and a feather head on the other. Show to people around you and find out which line appears bigger/ longer.

Is There Perception Without Sensation? Extrasensory Perception

Extra Sensory Perception (ESP) refers to such abilities of people which do not include the usual sensory organs, but an abstract sixth sense. Such abilities include knowing something ordinary people cannot know, communicating with people who are not in the immediate surroundings, knowing about events happening in distant places or about the future events that are going to take place. There are three types of ESPs. They are telepathy (connecting to people which are not around at that point of time), clairvoyance (being aware of such things which most of the others are not), and precognition (awareness of future events). For example, have you heard of Baba Vanga, a mystic who was famous for predicting the future events, or do you know about Lorraine Warren, the famous demonologist, was a gifted clairvoyant too. Like them, many people have such abilities to see, predict or feel things without any direct input from the usual sensory organs. Psychologists are particularly sceptical of reports of extrasensory perception. However, due to the difficulty of observing this procedure objectively, researchers feel that this concept cannot be studied using the traditional scientific methods and that the experimental findings in this area are unreliable and inaccurate. Most psychologists reject the existence of ESP.Thus, this topic usually gets slipped into the area of pseudo-psychology and still remains on the periphery of the mainstream of Psychology.

Notes

WHAT YOU HAVE LEARNT

ATTENTION

Nature of attention

Importance of attention in perception

Determinants of attention

Classification of attention

Perception

SENSATION AND PERCEPTION

How is sensation different from perception?

Laws of perceptual organization

Cues of depth perception

ERRORS IN PERCEPTION

Errors of perception- illusions

What is perceptual constancy?

What is extra sensory perception?

TERMINAL QUESTIONS

1. Distinguish between selective and sustained attention.
2. Enumerate the laws of perceptual organization.
3. The retinal image of the world is only two dimensional- yet why do we perceive the world in three dimensions? Explain.
4. What is perceptual constancy? Explain with your own examples.
5. Describe any three illusions.
6. Differentiate between sensation and perception.
7. What are the different internal and external factors affecting selective attention
8. What were the contributions of the Gestalt psychologists?
9. Explain ESP. Why many psychologists reject the existence of ESP?
10. While perceiving depth what are the two main sources of information we depend upon?

ANSWERS TO INTEXT QUESTIONS

5.1

1. Attention
2. Alerting function
3. Fringe and focus
4. Sustained and selective
5. Cocktail party effect

5.2

1. Physical
2. Need, interest and emotional state.
3. Movement

4. Change

5.3

1. B
2. D
3. E
4. A
5. C

5.4

1. True
2. False
3. True
4. True

5.5

1. Brightness constancy
2. Shape constancy
3. Brightness constancy

5.6

1. Universal
2. Personal
3. Phi Phenomena

7

LEARNING

It is expected that by now all of you can define the term Psychology and the related concepts like Attention and Perception. Your understanding about the various concepts is possible because you have been learning about all these in your previous lessons. Is it possible for a four year old child to read and write in the same manner as you do? Probably not, because the young child has not started reading and writing. However, the same child is able to communicate his/her needs to the parents and get his/her favourite toy. This is possible because by four years the child has learnt how to get what he/she wants. Learning is an indispensable part of every beings life. Not only humans but animals also surprise us the way they learn and acquire skills.

It is our past knowledge only that makes us adapt to the surrounding environment. It is learning that helps us carry forward our traditions and customs. You are able to comprehend what is written because it is the result of your learning over the years. Whatever we do comes out of our learning. However, all the more important is how we learn? This lesson focuses on developing an understanding about learning and the process of learning as well as various other aspects that are related to learning.

LEARNING OUTCOMES

After studying this lesson, learner :

- explains the nature of learning;
- elaborates the different types of learning;
- describes the ways in which learning gets transferred; and
- applies various principles of learning on one’s own.

Notes

7.1 NATURE OF LEARNING

Learning is "a process that leads to change, which occurs as a result of experience and increases the potential for improved performance and future learning" (Ambrose et al, 2010, p.3). Let us understand with the help of some examples.

- A child cleans the room after playing and the mother hugs him/her
- You do well in your assignment and this results in appreciation
- You went to the market and ate something that resulted in severe abdominal pain.
- You bring a basket of fruits from the market and realize that all the fruits at the bottom of the basket are rotten.

What according to you is the probability that these behaviours will be repeated in future?

While if we consider the first two situations then chances are that the behaviours will be repeated, whereas, the other two events indicate that we will avoid repeating behaviours where we feel being hurt or cheated.

You can have a lot of other examples from your daily life where you experience such things and you will realise that the behaviours which bring us pleasure are usually repeated and behaviours which bring us pain in any manner are avoided.

Think about a mistake that you made in the past and do not repeat the same in the future.

We acquire most of our behaviours through the process of learning. The desirable behaviours with effective outcomes are repeated and the undesirable behaviours with ineffective outcomes are avoided. (By desirable behaviour we mean anything that would bring in positive results).

So, learning is a change in behaviour based on positive and negative outcomes.

"Learning is any relatively permanent change in behaviour that results from practice." Weiss (1990)

The above discussion focuses on the fact that experience is the key feature of learning. In order to learn something, practice and experience are important. This is the process that we have been following for learning. Whether it is reading, writing, talking in public, making food or dancing among other things.

ACTIVITY

When you go to attend your Personal Contact Programme classes observe the possible reaction of the tutor when learners raise questions in the class:

The possible reactions can be:-

Your tutor:-

- listens patiently and answers the questions
- gets irritated and refuses to answer
- encourages learners to raise more questions
- scolds the learner for raising the question and disturbing the class
- appreciate the learner and asks him to wait till the topic is finished
- gets annoyed to the extent that ask the learner to leave the class

Make a note of the impact of different reactions of tutor on learner's behaviour of raising questions in future.

It is important for you to know that any change in behaviour that occurs in the absence of practice or experience does not qualify as learning. There are some behaviours that are exhibited not as a result of experience and practice but they occur because of development and maturation. For example, how an infant learns to sit or crawl. These developmental changes are a result of healthy development of the nervous system, spinal cord and brain.

Apart from maturational changes, there are instinctive behaviours in animals that just happen as a result of species-specific behaviour, for example, spiders making a web. Such behaviours do not require experience and practice.

Hence, by now it is clear to you that the change in behaviour that occurs as a result of development, maturation and instincts cannot be called learnt behaviour.

Now let us try to understand learning from a different perspective.

Can you recall any situation from your life where you realized that it would be difficult for you to adjust to the surrounding environment without learning a few skills?

According to B.F. Skinner learning is defined as a process of progressive behaviour adaptation".

Many of us today have started relying on the use of information and communication technology (ICT) for a lot of things. Your self-learning material is available online, you

can watch your lectures on SWAYAM (MOOCs) or SWAYAM PRABHA channel. Moreover, you do not have to stand in long queues to deposit your fees. This is possible because all of us have learnt to work with the computer system and make use of online available resources. We can have many more examples from our daily life that makes it clear that in order to adapt to the environment we are progressively changing our behaviours, whether it is a child who first learns to speak and then show marked changes in the ability to communicate, a person who has to learn to work on the computers because it is his/her job requirement or our ability to deal with the social world around us through social networking sites, learning to adapt with a peer group, current fashion trends, adapting to technology and many more.

Hence, learning also helps us in acquiring new knowledge and adapting to the environment.

INTEXT QUESTIONS 7.1

1. Define the concept of learning.
2. Differentiate between learning and maturation.
3. What's the difference between instinctive behaviour and learning?

7.2 DIFFERENT TYPES OF LEARNING

Do you remember that in the beginning of the lesson, it was mentioned that not only humans but animals also surprise us with the way they learn and acquire behaviours. Like many of us, psychologists, in the early part of the 19th century were also intrigued by the way animals learn. There were many experiments that were conducted to understand the phenomenon of learning by experimenting on animals. Although the experiments were conducted on animals however these experiments have major implications even today in Behavioural Psychology with human subjects. In this section we will talk about the early learning experiments by Pavlov and Skinner, as well as, we will also talk about observation learning, verbal learning and skill learning.

7.2.1 Classical conditioning or Learning through Association:

Ivan Petrovich Pavlov(1890-1936) was a Russian physiologist who was studying the digestive system of dogs. He observed that his dog, which was salivating for food, also started salivating whenever he saw the laboratory assistant bringing food for him.

This made Pavlov think that the dog had made an association between the presence of a lab assistant and food.

After this casual observation, Pavlov conducted a series of experiments to study more about the dog's tendency to make associations between unrelated circumstances and their tendency to respond. But before we move on to understanding the classical conditioning phenomenon let us understand the meaning of the following terms with reference to Pavlov's casual observation:

1. **Unconditioned stimulus (UCS):** it is anything in the environment that has the capacity to elicit a natural/automatic response: food presented to the dog
2. **Unconditioned response (UR):** it is a natural response: salivating to food
3. **Conditioned stimulus (CS):** It is anything that always happens with unconditioned stimulus and acquires the properties to elicit a response: in the above discussion the presence of lab assistant becomes an indication of food for the dog
4. **Conditioned response (CR):-**It is an automatic response that is established by training to an ordinary neutral stimulus: with reference to the above discussion salivating whenever the dog sees or hears the lab assistant coming to the lab.

Classical conditioning: Now when you are familiar with the above discussion let us understand the classical conditioning procedure in three phases.

Phase I

Before conditioning: In his experiments, Pavlov initially presented meat powder (the unconditioned stimulus) to his dogs which elicited saliva (the unconditioned response) which is a natural response.

Phase II

During conditioning: After a few trials just before presenting the food, he started ringing a bell (neutral stimulus) and then presented food. Pavlov noticed that initially the dog was unaffected by the bell and was giving a natural salivating response to food (the unconditioned response).

Phase III

After conditioning: After a number of such trials, the continuous pairing of bell and food made the dog to respond to bell i.e. the dog now started salivating to bell (conditioned response). This means that the bell now has become a conditioned stimulus

which is capable of eliciting the salivary response in the dog.

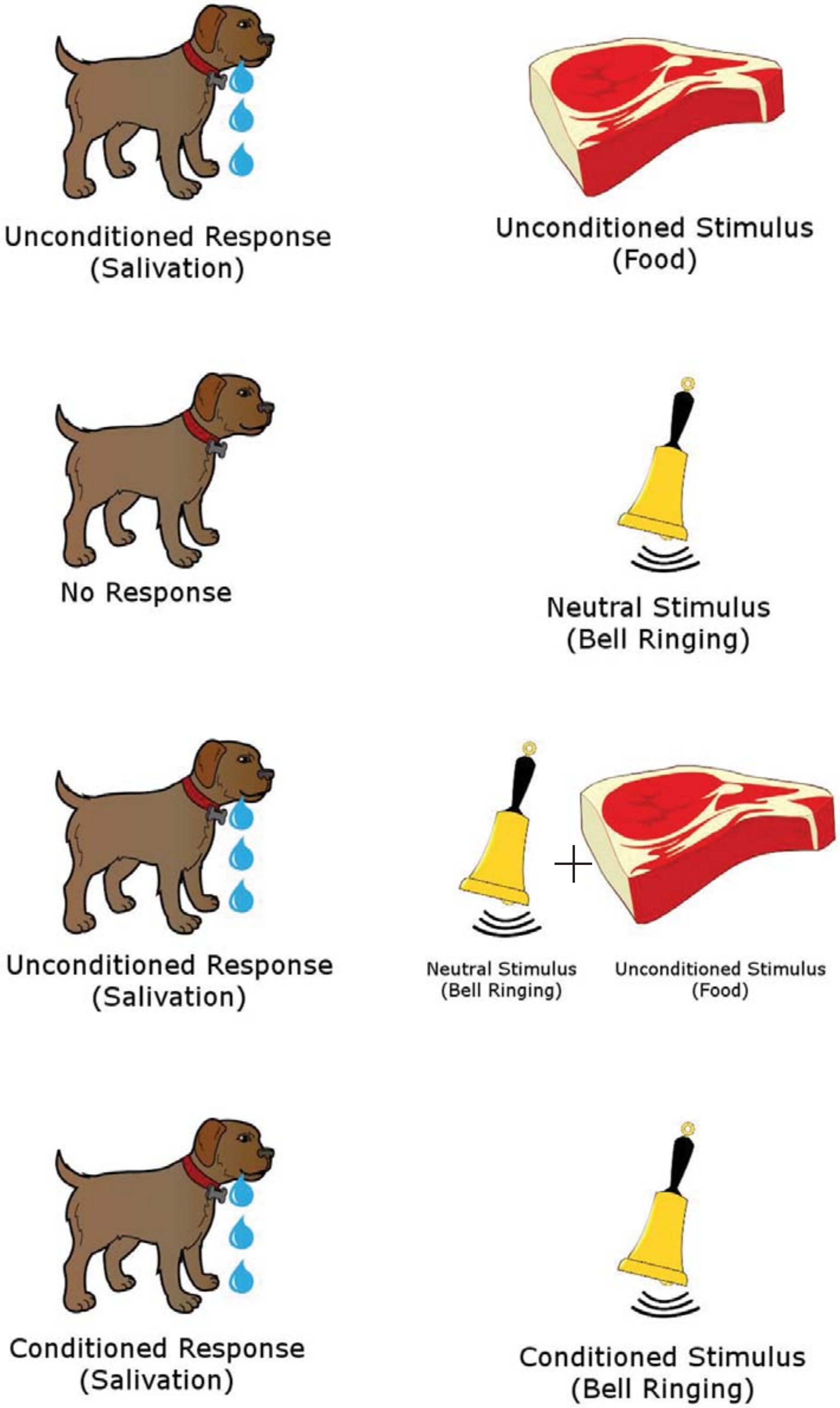


Figure 7.1

The classical conditioning procedure can be explained as follows:

Table 7.1

UCS (food)	☐	UCR (saliva)
NS (Bell) + UCS (food)	☐	UCR (saliva)
After repeated pairing of CS (Bell) + UCS (food)		
CS (conditioned stimulus)	☐	CR (conditioned response)

ACTIVITY

You are sitting quietly in the room and suddenly someone bangs the door and you feel startled.

You are sitting quiet in the room and someone who is wearing a very strong perfume bangs the door and you feel startled. The same set of events keeps happening every day. After sometime whenever you find the same strong fragrance of the perfume you will be startled before the person bangs the door.

Try and find out UCS, UCR, CS and CR in the above two examples

B. Principles in Classical Conditioning

Generalization

A child who fears a white dog would also be scared when sees a white furry toy. This is called generalization. This means that the child is generalizing all the white looking furry things to be a scary dog. In a classical conditioning experiment, during the course of conditioning the dog which is trained to give a conditioned response to the bell also learns to give the same conditioned response to the buzzer because of similarity in tone or pitch. However, generalization can be overcome through training to discriminate between similar things. This is called **discrimination.** In the above example, the dog can be trained to differentiate between a bell and buzzer by accompanying food only with a bell and not with a buzzer.

Extinction

In classical conditioning, Pavlov observed that the dog stopped responding to the bell when the experimenter was ringing the bell but not giving food. Initially, the dog was responding to the bell anticipating that the bell is a signal for food, but after a number of trials, the bell was not paired with food, so the dog stops responding. This is called

extinction of behaviour. This means that initially learnt behaviour is forgotten if the conditioned stimulus occurs in the absence of the unconditioned stimulus.

Spontaneous recovery

Do you think that once extinction occurs it can never be recovered? **No**, it is not so. In the above-given example of the dog if the same procedure of classical conditioning is repeated again (see table 7.1) then once again conditioning can be acquired.

C. Factors determining classical conditioning

Classical conditioning can occur under two conditions: **forward conditioning procedures** as well as **backward conditioning procedures**.

Forward conditioning:-this means that the conditioned stimulus occurs prior to the unconditioned stimulus. The forward conditioning can take place in three ways:

1. Simultaneous conditioning: this means that the conditioned stimulus and unconditioned stimulus (food and bell) occur (are given) at the same time.

2. Trace conditioning: this occurs when the conditioned stimulus is presented first and is stopped before the presentation of the unconditioned stimulus i.e. a trace (not the actual CS) of the CS is left before the onset of the US.

3. Delayed conditioning: it occurs when the CS is presented and is not removed until the US appears.

Backward conditioning:-What will happen if you are eating your favourite meal and then a bell is rung and you have to stop eating. This is called backward conditioning and occurs when the US is presented first and the CS appears afterwards.

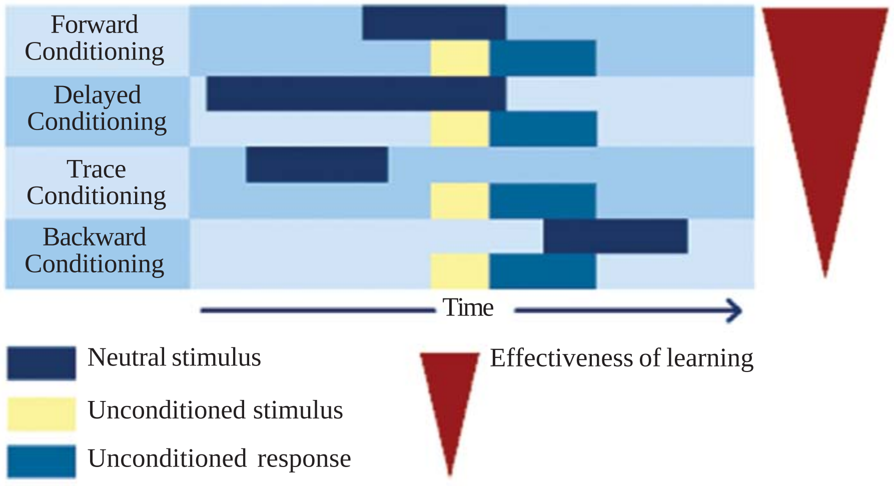


Figure 7.2 Respondent Conditioning

ACTIVITY

You can do one experiment to understand classical conditioning. Try giving candies to any small child in your family/locality every time you meet him/her. You will notice that the child will run towards you whenever he/she sees you, expecting that you will give candies.

7.2.2 Operant conditioning

B.F. Skinner (1938) developed the theory of operant conditioning. It is also known as instrumental conditioning. Operant conditioning principles are based on the assumption that the probability of doing something depends upon the consequence that follow the behaviour.

Think for a moment if you have doubt during your Personal Contact Programme (PCP) and you raise a question to clear your doubt but someone laughs at you what will happen?

Skinner made a chamber in which a hungry rat was placed and there was a lever attached in the chamber which upon pressing could release food for the rat. This chamber was popularly known as the Skinner box.

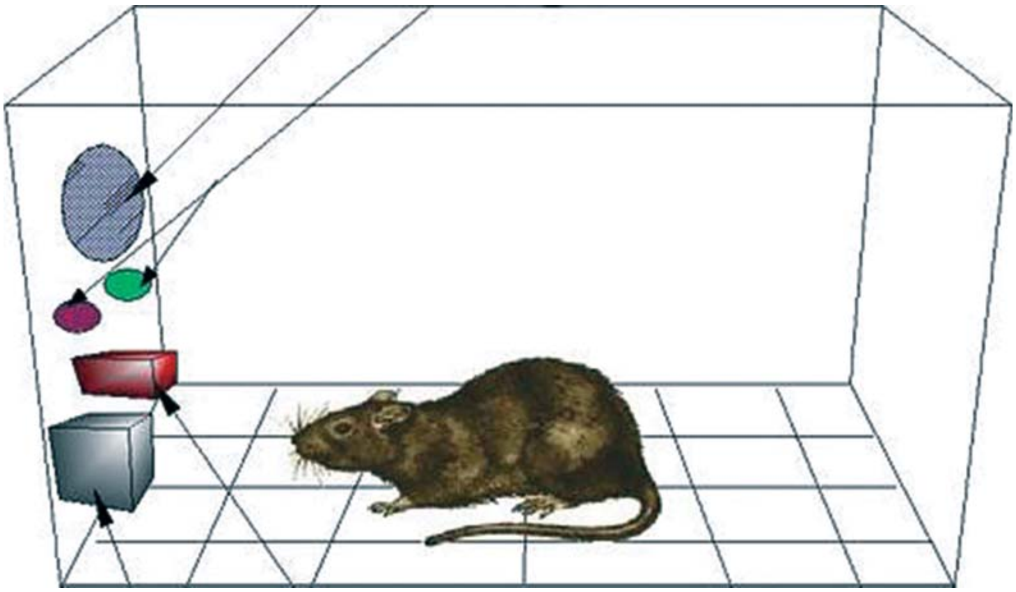


Figure 7.3

Notes

Initially, when the rat was placed inside the box it wandered here and there in search of food. When the rat was walking around the box it accidentally pressed the lever and got the food pellet. In the beginning, the rat could not realize how the food was released but after a few such trials, the rat learnt that pressing the lever would release the food pellet. This means that pressing the lever **(i.e. the behaviour)** was positively reinforced by releasing the food (positive consequences of behaviour).

In our real life too, we tend to repeat behaviours that bring us positive results and try to avoid behaviours that are not pleasant.

A. Basic processes in operant conditioning

Reinforcement:-Anything that strengthens a response or makes the behaviour more likely to occur.

There are different types of reinforcements that are given to strengthen the desirable behaviours and weaken the undesirable ones.

Positive reinforcement: Positive reinforcement increases the likelihood that the behaviour will be repeated in future.

For example, a child helps the mother in serving the food (behaviour) and in response to this the mother pats the child's back (positive reinforcement). The consequences i.e. (the pat) will increase the likelihood that the child will help the mother again in the future.

Negative reinforcement: Negative reinforcement also increases in strengthening a response or behavior by stopping, removing, or avoiding a negative outcome or aversive stimulus.

For example, you have an upcoming exam and instead of studying you are watching T.V., Your mother starts scolding you (negative reinforcement). In response to this, you switch off the T.V. and start studying (this is your behaviour). When you do this your mother also stops scolding (negative reinforcement is removed). This means that the negative reinforcement or aversive stimulus (mother's angerin this case) was removed after appropriate behavior (switching off T.V. and studying). The desired behaviour of you studying increases, to avoid scolding, which was the negative outcome.

ACTIVITY

Talk to parents having kids in the age range of 3-5 years and make a list of behaviours that parents modify with the help of reinforcements.

Other than positive and negative reinforcements, **punishment** in some circumstances can also help to modify the behaviours.

Punishment can have a positive as well as a negative response. Let us understand the following explanation:-.

Positive (Present negative reinforcer):- This means that the undesirable behaviour leads to undesirable consequences.

For example, when a child plays for a long time and does not do homework the mother scolds the child.

Negative (Remove positive reinforcer):- In negative punishment, an undesirable behaviour leads to removal of rewards.

For example, a child who plays for a long time outside and does not complete homework on time is deprived of his/her favourite food.

B. Schedules of reinforcement:

During his experiments, Skinner also introduced the schedules of reinforcement. These are precise rules that are used to present reinforcers following a specified operant behaviour. The reinforcement schedules are introduced to strengthen and maintain the learnt behaviour.

Different schedules are:

1. **Continuous reinforcements:** The rat gets food every time it presses the lever. This means that continuous pressing of lever results in continuous reinforcement (food)

   Other than the continuous schedules there are intermittent schedules that are based on the assumption that the reinforcement will be given **for only some** but **not for all the responses**.

2. **Intermittent schedules** can be understood in terms of **interval schedules and ratio schedules**

A. **Interval schedules** means the time after which the rat would get the food.

For example, the rat gets food after pressing the lever for 10 minutes (i.e. based on the time interval).

B. **Ratio schedules** on the other hand are the number of lever pressing responses to get the food.

For example, the rat will get food only after pressing the lever 10 times (i.e., based on number of trials).

The further classification of intermittent schedules can be done in terms of fixed schedule conditions and variable schedules conditions. Let us understand with the help of following examples:-

i. **Fixed interval schedules:** The rat gets the food only after a fixed interval.

For example, no matter how many times the lever is pressed, the rat would get the food only after a fixed interval i.e. sometimes after 15 minutes, other times after 1 hour or so on.

ii. **Fixed ratio schedules:** This means that the rat would get the food only after a fixed number of lever pressing is done.

For example, the food pellet is released only after pressing the lever for five times.

iii. **Variable interval schedules:** This means that it is not sure how much time interval will it take to get the food pellet. Sometimes the rat would get the food after 15 minutes, other times after10 minutes or so on.

iv. **Variable ratio schedules:** This means that it cannot be anticipated that after how many trials the rat would get the food. Sometimes after pressing 5 trials, and on some occasions after making 2 trials of lever pressing etc.

In real life too, for behaviour modification, the continuous reinforcement schedules are effective for establishing and strengthening a behaviour whereas the intermittent schedules are used for maintaining the established behaviour.

For example, if a child has acquired a habit of spitting on others, in order to make the child behave well i.e. to establish a response the parents need to give **continuous reinforcement** every time the child is exhibiting desirable behaviour.

To understand the **intermittent schedule, consider** that you are working in a company

and you get a salary after 30 days. This means that it is a fixed interval schedule. However, three might be a possibility that on some days you will work and on other days you would not put in much effort because you know that in any case salary is coming after 30 days' time. However, if performance-based perks are introduced other than the salary then you would be more motivated to work because it cannot be predicted when you will be rewarded other than your salary (variable schedules).

It is an obvious fact that **if a behaviour is never reinforced it would get extinct** whether it is a behaviour of asking questions in class or it is working in the company. The schedules of reinforcement are required to be introduced carefully to strengthen and maintain the desirable behaviours.

Observation learning or Social learning

Albert Bandura (1961) conducted experiments to show that children learn through imitating the behaviour of others. In his experiments, little children were exposed to aggressive and non-aggressive models. The children were made to sit individually in one corner of the room with the adult model and there were attractive toys in the room. The adult model sat near the other corner of the room where he /she played with the Bobo Doll. From his experiments, Bandura found that those children who saw an adult behaving aggressively with the Bobo Doll also behaved aggressively with the toys in another situation as compared to those children who saw a non-aggressive model not exhibiting as much aggression as their counterparts. Different researches have shown that violent television shows, movies, video games and music increases the likelihood of aggressive behaviour among those who are exposed to such shows. In Bandura's experiment, he also concluded that if the aggressive model was rewarded for the aggression then the children were more likely to imitate the aggression. This can be true for those who watch models on the T.V. being rewarded or appreciated for acting aggressively and as a result, such behaviour is imitated by the children who watch such shows.

Observational learning is influenced by the socio-cultural environment of the individual. Children imitate the behaviour of adults. The one whose behaviour is being imitated becomes the model.

For example, if a parent tells a child not to shout and while telling this the parent is shouting then the child will not follow what is being said but will learn what the child sees, in this case the child will learn to shout because he sees his/her model shouting (in this case the parent shouting).

NOTE: In order to inculcate good habits in children the parents must exhibit those habits themselves in front of their children.

Think about the last time you were copying your model while behaving. Your model can be anyone who you think is influential, be it your parents, siblings, public figure, etc.

7.2.3 Cognitive Learning

Until now we learnt how the behaviour is learnt as a result of rewards and punishments or is influenced by the environment The cognitive learning does not support the notion that behaviour is determined by whatever is presented to the organism. It believes that behaviour is very much influenced by the workings of the mind. There are two types of cognitive learning discussed here.

1. Insight learning
2. Latent learning

A. Insight learning experiment:

Wolfgang Kohler (1920) did a series of experiments with a chimpanzee named, Sultan to know how learning takes place as a result of insight. He placed the hungry Sultan in a cage with two hollow bamboo sticks. There was a bunch of bananas that were placed outside the cage that could not be reached without the help of the two sticks together. Initially hungry, the animal tried to catch the bananas with his hands but he could not, so he started playing with the sticks inside the cage. He could not realize in the beginning that two sticks can be joined together to reach the bananas. He tried to get the bananas using one stick at a time but he failed and became frustrated after trying for an hour. The animal gave up working to fetch the bananas and sat on one corner of the cage. After some time while playing with the two sticks he accidentally joined them together and got the insight that this long stick could help him in fetching the banana. He tried and got the bananas. Kohler insight learning experiments emphasize cognition and insight in bringing about a solution rather than the role of associations and consequences in learning.

A lot of times we work hard to solve our problems. However, failure leads to frustration. Sometimes we get an insight to the solution because even if we stop working our mind keeps working towards solving the problem.

Think of the last time it happened with you when you were stuck somewhere and after a rest period got an 'Aha' feeling of solving a particular problem.

B. Latent learning experiments

Tolman and Honzik, (1930) through their experiments demonstrated that learning can occur even in the absence of rewards. However, it will be exhibited only after appropriate reinforcement is given. To explain this they did maze learning experiments with rats.

There were three groups of rats who were required to run through a maze from the starting point to reach the goal in order to receive the food. The first group of rats received the food every time they ran the maze

The second group of rats did not receive the food for the first 10 trials even after they reached the goal point. However, from the 11th trial onwards they received the food every time they reached the maze.

The rats in the third group never received the food even after reaching the goal point. It was concluded that the second group of rats took less time to reach the goal after the 11th trial onwards because now they expected the reward would come. Though they were not reinforced in the beginning, that does not mean that they were not learning to walk through the maze.

It happens to us all the time. Our parents constantly teach us what to do and what not to do. We don’t seem to notice it, but when the time comes, we act accordingly.

Suppose you every day go on the bus to your place of work and learn the route from home to work. However, you do not exhibit this knowledge until it is necessary for you to drive on the same route.

7.2.4 Verbal learning

You are able to read and understand the material which is in front of you. Aren’t you? You listen to the news and understand what is happening around the world. You are able to express your feelings through the words you speak or write. This is what verbal learning is. Verbal learning is the skill of reading, writing, and understanding the written or spoken material. Through continuous practice and exposure to the verbal material we are able to develop this skill.. This is an amazing skill that as humans we have and this skill separates us from other animals.

Psychologists conduct different types of experiments to understand verbal learning.

1. Paired associate learning: Pairing two words like milk and cat. The next time when the word milk is presented the respondent says cat.

2. Serial learning: In serial learning a list of words is given and the learner is asked to recall the list in serial order.

3. Free recall method: In free recall a list of words is presented and the learner has to recall the list without considering the serial order.

Non- verbal learning: Learning is not only limited to reading and writing. We also learn to behave if we start understanding facial expressions.

For example, if the child finds that the mother always frowns when the child misbehaves then the child will learn that misbehaviors results in the mother frowning (expression of anger) and he/she learns to behave well to avoid mothers anger.

INTEXT QUESTIONS 7.2

Match the following

1.	Operant conditioning	a.	Insight
2.	Classical conditioning	b.	Imitation
3.	Observation Learning	c.	Reinforcement
4.	Verbal learning	d.	Association
5.	Cognitive learning	e.	Free recall

7.3 TRANSFER OF TRAINING

Transfer of training refers to the ability to carry forward the experiences of one learning situation to another. Have you seen people in various cookery shows? They actually have not made all the dishes that they are required to make while in the show. However, the basic sense of cooking and their experience with cooking facilitates making new innovative dishes. This is known as transfer of training.

Though the prior knowledge and experience facilitate the new situation, however, on the other hand, there are times when we are not able to learn something because we get confused with what we have learnt in the past.

The transfer of learning/training can happen in three ways:

Positive transfer of training: This happens when the old learning facilitates the new learning situation. For example, you keep a dictionary while reading and this helps you to communicate more effectively in future.

Negative transfer of training: This happens when the concepts of the previous learning make it difficult to acquire new concepts because one gets confused.

For example, if a child learns the concept of '**After' and then learns the concept of 'Before' then the first learning might interfere with the second learning.**

Think of an example when you found it difficult to learn a new concept because your previous experience was hampering new learning.

Neutral transfer of training: There are different learning situations that are not related to each other at all and hence do not either facilitate or hamper new learning situations. This is called a neutral transfer of training.

For example, how you cook is not related to how you drive a vehicle.

INTEXT QUESTIONS 7.3

1. Learning the course in 'History' is not related to learning to 'drive'. This is a perfect example of……...
2. If the previous learning aids in new learning it is called as…….
3. Someone needs to learn two foreign languages but is unable to learn the second one because the previously learnt language hampers in acquiring vocabulary of another language then it is called as ……...

7.4 APPLICATION OF PRINCIPLES OF LEARNING

Since the beginning of this lesson we have been learning about LEARNING. Do you think that the various principles that we have discussed in the previous sections can facilitate us in day to day life? Psychologists around the world use various principles of learning in behaviour modifications. The various ways in which the principles of learning can be used in our lives are as follows:-

Reinforcements: Both positive and negative reinforcements can be used to modify the behaviours of children to make them learn a range of appropriate behaviours.

For example if someone has a fear of public speaking then continuous positive reinforcement can be used to encourage whenever the child tries to speak in front of others. Practice, experience and encouragement can help overcome the fear. Such an exercise equally works with people in different age brackets and with different learning abilities.

Extinction: The process of extinction works to eliminate undesirable behaviour.

Do you remember when we were learning about extinction, we learnt that if the behaviour is not reinforced it gets extinct?

Suppose for example a child has acquired a habit of lying on the floor and crying whenever the demand is not fulfilled. Giving in to the demands of the children means to reinforce the behaviour of lying down on the floor. If the parents do not reinforce this behaviour and do not give importance to the behaviour then after some days the behavior would get extinct.

Premack principle: This can also facilitate more desirable behaviour among individuals. For example, in order to play with friends the child first needs to clean the room.

Observation learning: This is process of learning by observing the behaviours of others. The desired behaviour is observed, memorised, and then imitated. Observational learning, also known as shaping and modelling, is most common in children as they imitate the behaviours of adults.

Cognitive Learning: Do you ever realize what happens when you work on the problem on your own and try to reflect on your experiences to come to the solutions then learning is the most effective.

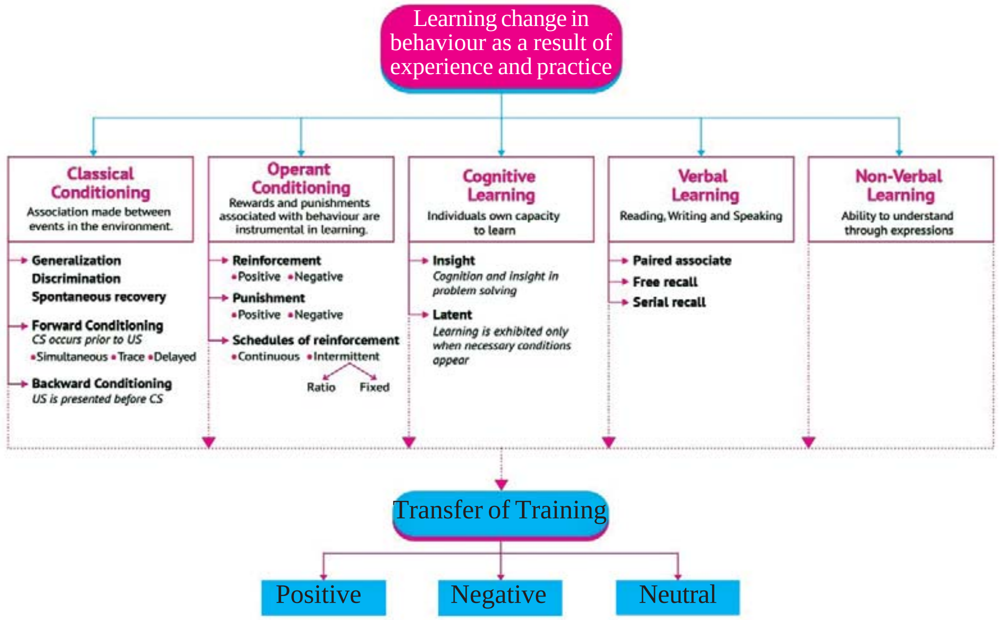
For example, reflect on your experiences and try to understand how you learn, by listening to someone, by watching a video, by doing things on your own etc.

Learning and motivation: It is really important to understand that if you are motivated to learn something you will learn it fast.

For example, someone whose job requirement is to travel a lot so instead of relying on the public transportation one wants to drive on their own. Such a person will learn driving quickly as compared to the others who does not have a specific motivation to drive.

Notes

WHAT YOU HAVE LEARNT



TERMINAL QUESTIONS

1. How does observational learning affect behavior?
2. Discuss with examples how positive and negative reinforcement can be used with little children to make them learn appropriate ways of behaving.
3. Discuss in detail the cognitive learning theory and how it is different from classical conditioning and operant conditioning?
4. What are the different schedules of reinforcement? Discuss their role in establishing a behavior.
5. Discuss any three ways in which different principles of learning can be applied in day-to-day life.
6. What are the three types of transfer of training? Give examples of each type.
7. Define and give examples of verbal and non-verbal learning in Psychology?
8. What is the basic principle of operant conditioning as demonstrated by B.F. Skinner?

9. What is the three-phase process of classical conditioning as described by Pavlov's experiments on dogs?

10. What is the role of learning in adapting to the environment and acquiring new knowledge?

ANSWERS TO INTEXT QUESTIONS

7.1

1. Learning is defined as theprocess of obtaining information or ability by studying, practising, experiencing something.

2. Learning is defined as the process of acquiring knowledge, skills, and behaviours, whereas,maturation refers to both the mental and physical development of a person.

3. Instinctive behaviour refers to species-specific behaviour and is inherent. Learning occurs as a result of experience and practice.

7.2

1. c
2. d
3. b
4. e
5. a

7.3

1. Neutral transfer
2. Positive transfer
3. Negative transfer

8

HUMAN MEMORY

As a student does it ever intrigue you that what mental processes are essential for good academic performance?

How do you remember the birthday of your close friend?

Has it ever happened with you that you failed to recognize a known person?

Think about the above questions and many more daily based experiences of human life. These situations demand coordination among various mental processes such as perception, learning and memory. For example, a good score in exam is the result of learning the study material well and retrieving the learned information during exam without failure or forgetting. So let us try to understand what these mental processes really are.

As you have already studied, learning refers to a relatively permanent change in behavior due to training or experience. Learning plays a central role in every sphere of life either social or personal. But learning is not the only mental processes essential in maintaining and performing daily life tasks, memory also plays an integral function. Memory is a central cognitive process which plays vital role in human life. Memory helps us to retain the learned information, experiences of past, present which contributes in performing future plans and actions. Memory facilitates the process of learning. We have to be dependent on memory to recall the facts, events and experiences. For example, if an individual knows how to drive a car but does not drive on an everyday basis. Yet when an occasion comes when s/he needs to drive her/his loved one to hospital s/he will immediately recall the learned rules and perform the skill to fulfil the need of that particular moment. This represents the importance of memory. This chapter aims to provide understanding about the process of memory and technique to enhance one's memory.

LEARNING OUTCOMES

After studying this lesson, learner :

- discusses the nature of memory;
- explains the underlying processes of memory;
- illustrates the nature and causes of forgetting;
- states the application of mnemonics in enhancing memory; and
- employs different techniques to augment one's memory.

8.1 NATURE OF MEMORY

The word "Memory" originates from the Latin term '*memoria*' and '*memor*', meaning "mindful" and "remembering" respectively. The term memory can be better understood as the process of maintaining information over time. It can also be understood as the means by which we draw on our past experiences in order to use this information in the present.

Memory involves processing of vast amount of information in different forms, such as echoic, iconic and meaning. Memory serves several functions. First, memory provides continuity for consciousness. Second, it helps in effectively dealing with situations at hand by utilizing essential skills. Third, it helps in enriching our social and emotional experiences by effective planning and performance. How this exactly happens will be clear by understanding the processes or stages of memory.

8.2 MEMORY PROCESSES

Memory processes can be understood in three stages. They can be easily memorised as 3R's of memory (register, retain, retrieve):

- **Encoding (or registration)**

  Encoding is the process of converting the sensory information coming from the environment that can be registered in the memory system. There are three steps involved in the encoding process: receiving, processing, and combining information. For example, you listen to a song in a party, and you likeed this song so you try to understand its lyrics. When you convert this auditory signal

into echoic unit so that it can be stored into the memory system, it is called the process of encoding.

- **Storage (retention)**

  Storage is the process of converting the incoming information into permanent records so that it can be accessed later when needed. To take the example forward, once you understand the lyrics you try to store it in memory either through maintenance rehearsal (by mere repetition of the song) or through elaborative rehearsal (when you comprehend the meaning and associate it with your own feelings). This is called the process of storage.

- **Retrieval (recall, or recognition)**

  Retrieval is the process of locating and leveling the stored information from the storehouse to the consciousness at the time of need. Now imagine that you are enjoying some leisure time and feel like singing a song so you would perhaps recall the song you encoded and stored. Once retrieved you would play it and probably sing along it. This represents the process of retrieval of memory.

Fig8.1: Stages of Memory

Interruption at any stage will affect forthcoming stages of memory and may also result in forgetting of stored information.

INTEXT QUESTIONS 8.1

Notes: Write your answer in the space given below and compare your answer with those given at the end of this unit.

1. An individual's record of past events and experiences is:

   (a) Learning

   (b) Perception

   (c) Memory

   (d) Sensation

2. Which one of the following is not included in the stages of memory?

   (a) Encoding

   (b) Rehearsal

   (c) Storage

   (d) Retrieval

3. Recall and _________ are the two types of retrieval.

8.3 MODELS OF MEMORY

There are different models of memory which helps in understanding the underlying process of memory.

8.3.1 Atkinson and Shiffrin model:

This model is also known as information processing model as well as modal model. Atkinson and Shiffrin noticed that human memory and computer systems process information in similar fashion where information passes through the three stages of memory: encoding, storage and retrieval. This model proposes three systems of memory and therefore is also sometimes called stage. These systems are Sensory Memory, the Short-term Memory and the Long-term Memory. Each of these systems have different features and perform different functions in relation to memory.

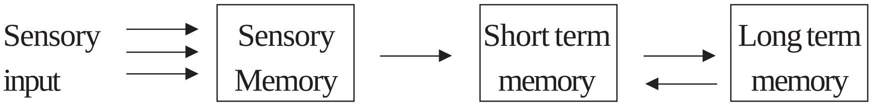


Fig 8.2: Human memory system and its three components.

***Sensory Memory*:** Information from the environment first enters the sensory memory through the senses. There are various incoming sensations at a given point in time therefore sensory memory has a large capacity. However, it stays for a very short duration, i.e., less than a second. For example, at present, you can hear the sound of traffic at distance, or air coming from the fan or the lecture of the teacher or the sound of the pages turning. All this information is entering your sensory memory but it is further processed into short term memory only if you pay attention to it.

Short-term Memory: Information that is attended by the sensory system enters the short-term memory (STM). Short-term memory holds limited information for a brief

period of time which is more than sensory memory but less than long-term memory, i.e., less than 30 seconds. If the information is not rehearsed at this stage, it faces difficulty in proceeding the information to the next stage of memory. There are two types of Rehearsal: maintenance and elaborative rehearsal. Maintenance rehearsal is also referred as rote learning wherein constant repetition of information helps in retaining the information in consciousness for some time. Whereas the elaborative rehearsal is more detailed in nature. In elaborative rehearsal the information is retained through forming connections of new information with previously learned material.

***Long-term Memory*:** Information enters the final stage of memory which is long-term memory through elaborative rehearsal. It has a vast capacity for an unlimited period of time as it is a permanent storehouse of all information. Once the information enters the long-term memory store it is never forgotten because it is encoded semantically or based on the meaning of the information.

8.4 TYPES OF MEMORY

Memory can be classified based on different criteria such as nature of material, span of time, amount of information etc. The classification given below is widely accepted amongst the scientific community and is easy to grasp. Based on this classification, memory can be divided into two types i.e., implicit and explicit memory.

- **Implicit memory:** It is also referred as unconscious memory or automatic memory. Implicit memory is the type of memory wherein the task is performed without putting conscious efforts in processing or recalling of previous experiences or information. For example, walking is the function of implicit memory because the process of walking happens automatically or without mental efforts.

  - **Procedural memory:** Is a subtype of implicit memory. It is required for those tasks where motor skills are required. For example- while riding a cycle, cyclist does not need to recall the steps of riding each time.

- **Explicit memory:** It refers as declarative memory which requires conscious efforts in recalling the previous experiences and information. Declarative memory involves both episodic and semantic memory.

  - **Episodic memory:** It is a type of memory which stores the information related with events and connections between those events. It refers to personal experiences. Example: I have a Psychology class tomorrow at 9:30 A.M.; My birthday comes on 20th December every year.

- Semantic memory: In contrast to episodic memory, semantic memory includes the organized knowledge which is general in nature. Example: Indira Gandhi was the first women prime minister of India, or Hg is the symbol of Mercury.

INTEXT QUESTIONS 8.2

Notes: write your answer in the space given below and compare it with the answers given at the end of the unit.

1. Information processing model was proposed by __________ and ___________.
2. Sensory memory has ________ duration and ________ capacity.
3. Elaborative rehearsal is used to transfer the information from sensory memory to short term memory. (True/False)
4. Procedural memory is a subtype of implicit memory. (True/False)

8.5 FORGETTING

Have you experienced the blankness during exam for which you were well prepared or have you had that moment when you forgot the things your mother asked you to get from the grocery shop? Hermann Ebbinghaus was the first psychologist who systematically studied the nature of forgetting. He utilised nonsense syllables or Consanant Vowel Consanant (CVC) trigrams in his experiment, where he attempted to measure the nature of forgetting in terms of number of trials a participant took to relearn the same list at varying time intervals. Based on this experiment, Ebbinghaus proposed the model of forgetting which states that the rate of forgetting is maximum in the first nine hours, particularly during the first hour. After that the rate slows down and not much is forgotten even after many days. It can be well understood by observing Ebbinghaus's Forgetting Curve in figure 8.3.

Notes

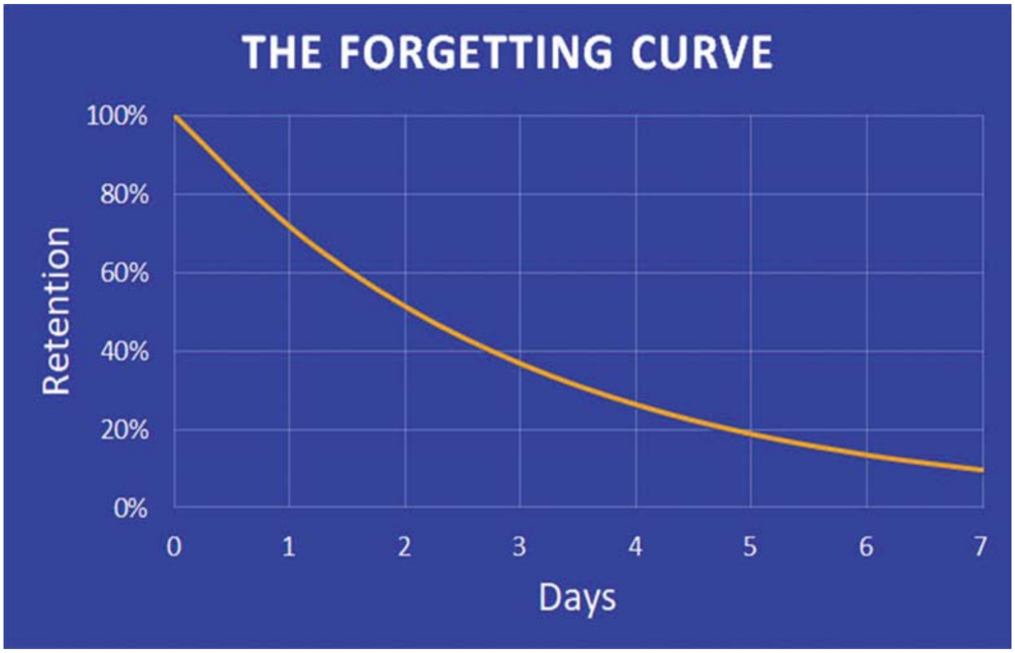


Fig 8.3: Ebbinghaus Forgetting Curve

8.5.1 Causes of Forgetting

Though forgetting is an everyday human experience but it is difficult to state what causes forgetting. There are several theories that state the cause of forgetting in their own unique style.

- **Trace decay:** One of the oldest theories of forgetting is trace theory or also known as disuse theory. This theory states that memory leads to relatively permanent physical change in our central nervous system. These changes in brain are referred to as memory traces. Memory traces stay in brain if constantly used but they tend to disappear or fade away if not used for a long period of time. Fading away of these memory traces causes forgetting of learned material or information. Although this sounds simple but this theory has been criticized on several grounds. Based on this theory it can be safely assumed that if we memorize a list of words before going to sleep we will forget it after waking up but in reality, the opposite holds true.

- **Interference theory:** It states that forgetting occurs due to the interference between learned or memorized information. This theory assumes that learning or memorizing occurs due to formation of association between old and new information. Forgetting according to this, occurs when either the new information interferes with the recollection of old information or when old information

interferes with the learning of new information. However, interference plays a critical role at the time of retrieval when these various sets of associations compete with each other for retrieval. Two of the most referred types of interferences are:

- **Proactive interference:** (Forward moving) means when the old information interferes with the successful recollection of new information. For example: Imagine that your old car number was 2333 and your new (present) car number is 4535, when asked by the traffic officer you say the old car number. This immediate recollection of old information and blocking of new information by old information is called proactive interference.

- **Retroactive Interference: :**(Backward moving) means when the old information is difficult to recall because it is blocked by the new information. For example: Imagine you have changed your mobile number. After sometime when asked about the old number you were using, you are unable to recall it. This is an example of retroactive interference.

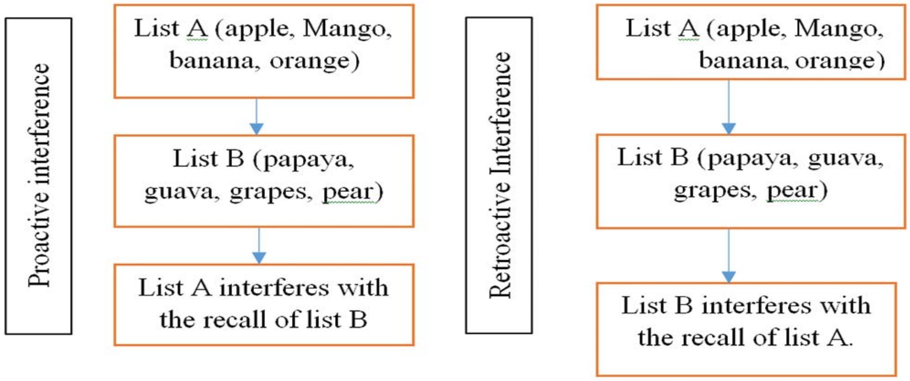


Fig 8.4: Diagrammatic representation of retroactive and proactive interference

8.6 TECHNIQUES OF ENHANCING MEMORY

Humans are heavily dependent on their memory for their day-to-day tasks. Therefore, it has been an agenda for psychologists to figure out strategies to enhance memory. Some of the famous strategies are:

- **The Keyword Method:** In the keyword method, we try to learn or memorize the new information by forming connections with old information. Suppose you are learning a new or foreign language. To be able to learn the new language faster and better you use similar sounding words of your mother tongue or old already learned language. This similar sounding world helps you in retaining the new language better. This technique is better than rote learning. For example, VIBGYOR is abbreviation of 7 colors of the spectrum i.e., violet, indigo, blue, green, yellow, orange and Red.

Notes

- **The Method of Loci:** In order to use the method of loci, items you want to remember are placed as objects arranged in a physical space in the form of visual images. This method is particularly helpful in remembering items in a serial order. It requires that you first visualize objects/places that you know well in a specific sequence, imagine the objects you want to remember and associate them one by one to the physical locations. For example, suppose you want to remember bread, eggs, tomatoes, and soap on your way to the market, you may visualize a loaf of bread and eggs placed in your kitchen, tomatoes kept on a table and soap in the bathroom. When you enter the market all you need to do is to take a mental walk along the route from your kitchen to the bathroom recalling all the items of your shopping list in a sequence.

- **Mnemonics using organization:** Organization refers to imposing certain order on the material you want to remember. Mnemonics of this kind are helpful because of the framework you create while organization makes the retrieval task fairly easy.

- **Chunking:** Under this, several smaller units are combined to form large chunks. For creating chunks, it is important to discover some organization principles, which can link smaller units. Therefore, apart from being a control mechanism to increase the capacity of short-term memory, chunking can be used to improve memory as well. For example, the large number 1947195019841962 can be better learned in four different chunks 1947- year of independence of India, 1950 year of implementation of the Indian constitution, 1984- assassination of Smt. Indira Gandhi, 1962- year of Indo-China war.

- Minimize Interference: Interference, as we have read, is a major cause of forgetting and therefore you should try to avoid it as much as possible. You know that maximum interference is caused when very similar materials are learned in a sequence. Arrange your study schedule in such a way that you do not learn similar subjects one after the other. Instead, pick up some other subject unrelated to the previous one. If that is not possible, distribute your learning/practice. This means giving yourself intermittent rest periods while studying to minimize interference.

- **Give Yourself Enough Retrieval Cues:** While you learn something, think of retrieval cues inherent in your study material. Identify them and link parts of the study material to these cues. Cues will be easier to remember compared to the entire content and the links you have created between cues and the content will facilitate the retrieval process.

- **PQRST:** Thomas and Robinson have developed another strategy to help students in remembering more which they called the methods of PQRST. This acronym stands for Preview, Question, Read, Self-recitation, and Test. Preview refers to giving a cursory look at the chapter and familiarizing oneself with its contents. Question means raising questions and seeking answers from the lesson. Now start reading and look for answers of questions you had raised. After reading try to rewrite what you have read and at the end test how much you have been able to understand.

There is no one method that can solve all problems related to retention and bring about an overnight memory improvement. In order to improve your memory, you need to attend to a wide variety of factors which affect your memory such as your health status, your interest and motivation, your familiarity with the subject matter and so on. In addition, you must learn to use strategies for memory improvement depending upon the nature of memory tasks.

INTEXT QUESTIONS 8.3

Note: write your answer in the space given below and compare it with the answers given in the end of the unit.

1. Hermann Ebbinghaus utilised the concept of nonsense syllables or _____ trigrams in his experiment on forgetting.
2. When the old information is difficult to recall because it is blocked by the new information, it is called ________ interference.
3. The acronym PQRST stands for Preview, Question, ____, Self-recitation, and ____.

ACTIVITY

8.1. Prepare a list of tasks you have carried out throughout the day and then try to classify the type of memory it is, e.g., driving is procedural memory whereas wishing a friend on his/her birthday is an example of episodic memory.

8.2. Conduct an experiment with your friend wherein give him/her a list of words to remember and which technique of remembering has s/he used.

8.3. Try to remember the list of the grocery items using the method of loci and find its effectiveness.

WHAT YOU HAVE LEARNT

- Models of Memory
  - Atkinson and shiffrin model
    - Sensory Input
    - Sensory Memory
    - Short Term Memory
    - Long Term Memory
- Models of Memory
  - Memory Processes
    - Encoding
    - Storage
    - Retrieval
- Types of memory
  - Implicit Memory
    - Explicit Memory
    - Explicit Memory
    - Semantic Memory

- Forgetting
  - Causes
    - Trace Decay
    - Interferences Theory
  - Techniques of Enhancing Memory
    - The Keyword Method
    - The Keyword Method
    - The method of Loci
    - Chunking
    - PQRST

TERMINAL QUESTIONS

1. Define the nature and processes of memory.
2. Elaborate on Atkinson and Shiffrin's model of information processing.
3. Describe forgetting and its causes.
4. Discuss the various techniques of enhancing memory.
5. What is the role of learning and memory in daily life tasks and why are they essential mental processes for good academic performance?

6. What are three stages of memory processes and how do they work?

7. What are the two types of memory and their subtypes, as classified based on different criteria? What is the difference between implicit and explicit memory and their subtypes?

8. What are the two main theories of forgetting according to Ebbinghaus model of forgetting? How do they explain the cause of forgetting?

9. Draw and explain Ebbinghaus Forgetting Curve.

10. What are the functions of memory and how does it contribute to our conscious experiences and daily life activities?

ANSWERS TO INTEXT QUESTIONS

8.1

1. (c) Memory
2. (b) Rehearsal
3. Recognition

8.2

1. Atkinson and Shiffrin
2. Shorter and Large
3. False
4. True

8.3

1. CVC
2. Retroactive
3. Read and Test

9

MOTIVATION

Every morning at 5 am, Asif's alarm rings loud. In the next half an hour, Asif is in the cricket academy next to his house, warming up for the next two and half hours of exercise and practicing in the cricket nets. Irrespective of the season of the year, Asif is in the academy every morning without fail. Someday, he hopes to play cricket like his role model, Sachin Tendulkar. Why does Asif wake up every morning for practice while most of us would be snoozing our alarms away? The simple answer is motivation. In other words, Asif is driven towards a goal, which in this case, is to become a cricketer. Motivation is the driving force behind our day to day behaviour. In the next few pages, you may be surprised to find out that even mundane activities like eating and drinking also involve motivation. In this chapter, we will understand the concept and cycle of motivation, various types of motives, intrinsic and extrinsic motivation. We will also touch upon a popular theory of motivation given by Maslow and the relationship between aspiration, achievement and human efforts.

LEARNING OUTCOMES

After studying this lesson, learner :

- defines the concept of motivation;
- outlines the different types of motives;
- discriminates between intrinsic and extrinsic motivation;
- states Maslow's theory of needs; and
- explains the relationship between aspiration, achievement and human efforts.

9.1 CONCEPT OF MOTIVATION

Motivation can be described as the process by which activities are started, directed and continued, and thus meeting our physical or psychological needs. The word itself is derived from the Latin word '*movere*' which means 'to move'. So one can say motivation is the energy that 'moves' people to carry out things that they wish to do. It can be understood as an ignition that propels goal directed behaviour. Like other aspects of human behaviour, motivation does not occur in isolation. It is derived from our genetic framework and evolves with the nurturance acquired from the environment (parents, family, school, media etc) and the culture in which one is brought up.

9.1.1 Motivation Cycle

Motivation can be understood in terms of a cyclical process (Fig.9.1) towards attainment of a desired goal or outcome. The source of all motivation can be traced to **'needs'** which refers to a lack or a deprivation. It may be biological (e.g. hunger) or psychological (e.g. affection) in nature. Since needs act as the motivating forces, they are also known as **motives.** Needs produce **'drive'** which refers to a state of tension where the need is intensified. This triggers the **'arousal'** of actions that direct behaviour along the path of fulfilling the need. In the motivational cycle, this phase is represented by **'goal-directed behaviour'**. In the course of actions, if there is an **'achievement'** by means of satisfaction of the need, there is a **'reduction of arousal'** and balance is restored in the behavioural activities. That is until a need arises again and the pattern repeats.

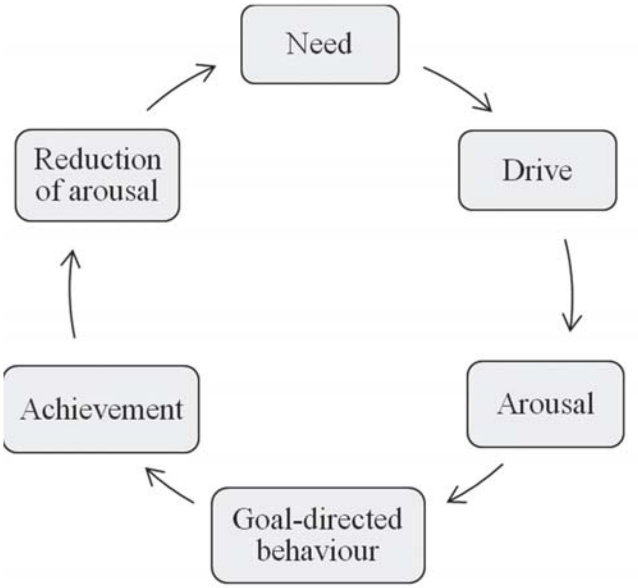


Fig 9.1 Motivation Cycle

Let us understand it with the help of an example. A universal biological need that all of us have experienced is hunger. The unpleasant noises coming from a hungry stomach fuel the hunger drive in our body. When hungry, we seek for ways to satisfy it. This may involve cooking, purchasing food or going to a hotel etc. Once food is consumed and the stomach feels full, the hunger drive disappears.

9.2 TYPES OF MOTIVES

The key element of motives is that one cannot perceive them directly. They are inferred or predicted from the behaviour undertaken by the people. For example, a child who is regular for every task and does them sincerely is inferred as hardworking and goal directed; a child who goes out of the way to help others can be inferred as having high social needs. Human behaviour, at any point of time, is driven by many needs or motives. Psychologists broadly classify motives into two categories-

i. Primary or Biological motives

ii. Secondary or Psychosocial motives

Primary motives are rooted and driven by physiological functions occurring within the body and hence are also known as biological or physiological motives. On the other hand, secondary motives are placed in the external environment like social, cultural settings and are also known as psychosocial motives. While both biological and psychosocial motives work in interdependent manner, yet for conceptual clarity, they are explained here separately.

i. **Biological Motives:** As mentioned above, biological motives are triggered internally.. They are based on the basic premise that physiological processes like neural activities, hormonal secretion are the basic drives that affects an individual's behaviour. Theories on biological motives were the earliest attempt on explaining motivation and viewed human behaviour as primarily instinctual i.e., driven by instincts. Instincts refer to innate urges or tendencies that lead to predetermined and hence predictable patterns of behaviour in a species. Instincts can then be viewed as internal guiding forces that direct behaviour towards satisfying needs arising from within the body. The basic needs covered under biological motives are hunger, thirst and sex which play an important role in survival and sustenance of an individual.

Hunger-All living beings experience hunger and are driven to satisfy it by having food. Research studies indicate that there are many events within the body and the external environment that initiate or curb hunger. We usually experience hunger when there are

stomach contractions but studies have proved that living beings experience hunger even when the stomach is removed from them. Researchers have found that amount or level of dissolved nutrients in the blood is one of the determinants of hunger. Nerve impulses sent through liver also acts as cues for hunger. The metabolic functions are taken care by liver and any change in the rate of metabolism also determines hunger motivation. Within the brain, hypothalamus has been associated with hunger motivation. Lateral hypothalamus is considered as the excitatory area which results in eating, whereas ventro-medial hypothalamus inhibits the hunger drive. Apart from these internal factors, external factors like food presentation, aroma and cues to past experience may also result in the desire to eat.

Thirst-Water deprivation leads to dryness of mouth, throat and can even lead to dehydration. Dryness of the mouth occurs when the cells of the body are low on water content and there is reduction in blood volume. Reduced blood volume also results in lower blood pressure. The exact process underlying thirst motivation is still under research. It is essentially understood that nerve cells known as osmo receptors are present in the anterior hypothalamus. They generate nerve impulse in case of cell dehydration. This nerve excitation acts as a signal to drink water. This process is known as cellular dehydration thirst. No clear cut answer is available for why an individual stops drinking water. Some researchers propose that the mechanism responsible for initiation of thirst motivation is also responsible for drinking any further.

Sex-Sexual motivation is a complex phenomenon which is driven by biological processes as well as psychosocial environment (specially in humans). The sex hormones determine the structure of the body and functioning of the hypothalamus (part of the brain), that further regulates the release of the hormone. Unlike other biological motives, it is not necessary for survival; reaching equilibrium is not the goal for this motive. Research suggests that sexual motivation is driven by the level of sex hormones present in the blood. The release of sex hormones is controlled by gonads, ovaries in females and testes in males, which develop in human beings over a period of time. Other endocrine glands like adrenal gland and pituitary gland have been found to play a role in sexual motivation. In human beings, beyond these physiological aspects, the expression and stimulation is environment and culture driven.

ii. **Psychosocial Motives:** While biological motives are driven mainly by physiological needs within an individual, psychosocial motives arise from an individual's interaction with his/her environment. They relate with psychological aspects of behaviour like achievement, attachment and need for power which cannot be solely determined by individual physiology/biology. Rather they are

learned and develop during the process of socialization by an individual. The socializing agents may range from parents, peers, family, school, media and the socio-cultural system at large. Hence we call them psychosocial motives.

Achievement Motivation-Be it academics, sports, drama, fine arts or any other field, people differ in their needs to move high up the ladder. Some people work very hard, are competitive and leave no stone unturned to reach the acme. They do so as they have high need for achievement. Need for achievement is also denoted as **n-Ach**. This need directs people towards higher goals, influences their perception and behaviour to achieve the target. This need is influenced by the environment because the stimulation received by the individual further guides his/her perception, learning and the need to acquire goals. Various researchers have found that persons with high achievement motivation can be distinguished from those who are low in this motive. For instance, they prefer tasks which are moderately difficult such that it is challenging enough while not risking failure. Also, people with high need for achievement purposefully look for feedback as it helps them to realistically determine the gap between their effort and their target. For example, a corporate employee high on achievement motivation would enjoy working with a firm that provides regular performance evaluation with feedback. Similarily, a student with high on achievement would perform better with feedback from regular internal assessment by the teacher.

Affiliation Motivation-Affiliation motivation is also denoted as **n-Aff**. Humans and animals alike have a tendency to be with others and to belong. It is observed that most people enjoy the presence of others; it would be rare to find people who want to be alone all the time. We wish to share our joy, sorrows, achievements and grief with other known people in our social environment. Furthermore, the tendency to be with like-minded people is the basis of group formation. At times, we affiliate with others to overcome some fear or to acquire a goal, etc. As with other needs, need for affiliation also differs from person to person. Those who are high on this need make an extra effort to be friendly and maintain relationships. Again, it is also learned from the environment through socialization. For example, a person with high affiliation motivation would seek to repair broken relationships between friends.

Power Motivation-As with other motives, need for power denoted as **n-Pow** also differs among people. Some people are high on it while others could be moderate or low in controlling others. People who are high on this need intentionally or unintentionally influence the emotions, behaviours and acts of people in their surroundings. By doing so, they consider themselves at a higher platform over others and expect others to believe so.

Power expression is generally known to reflect in four ways-

a. People indulge in action with others to have an impact on them (e.g. indulging in an argument etc.)

b. People try to do things with themselves to feel a sense of power (e.g. body building, mastering control on their urges by fasting etc.)

c. Others may read stories, watch videos of powerful people and start attaching themselves with them to feel a sense of power.

d. People do things as part of groups or organizations to develop an impact on others (e.g. class monitors, union leaders, political leaders etc.). The need for power is influenced by the kind of experience an individual has along with socialization and socio-cultural norms.

For example a student with high power motivation will strive for leadership positions like becoming a class monitor or house representative.

INTEXT QUESTIONS 9.1

Choose the correct option

1. The process which directs and sustains behaviour to reach a goal is known as

   (a) Motivation (b) Incentive

   (c) Drive (d) Desire

2. Hunger does not involve this physiological factor

   (a) Corpus collosum (b) Stomach

   (c) Pancreas (d) Hypothalamus

3. Biological motives are not driven by-

   (a) Hormones (b) Faith

   (c) Hypothalamus (d) Neurotransmitters

4. Psychosocial motives are mainly explained through-

   (a) Physiology (b) Culture of individual

   (c) Hormones (d) Intersection of individual with environment

9.3 INTRINSIC AND EXTRINSIC MOTIVATION

The desire to achieve, attach or do something i.e., motives may be driven internally or externally. Depending on whether the source of motivation is coming from within the individual or due to external factors, motivation can be classified into intrinsic and extrinsic motivation.

Intrinsic Motivation-When an individual is motivated for a task because he/she finds it personally rewarding, and not because it leads to external incentives, it is a case of intrinsic motivation. Intrinsically motivated individuals require no external pull or push to do something or to act in a particular manner. E.g. cleaning your room because you like being an organized person; reading a book because you love the storyline; engaging in activities like cooking, gardening, sewing as they are your hobbies and so on. Animal behaviours (especially biological needs) are mostly intrinsic in nature.

Extrinsic Motivation- Humans being social creatures are many-a-times pushed or pulled by external sources to move in a particular direction to achieve a desired goal. When external factors like desire for rewards or fear of punishment drives behaviour, it is a case of extrinsic motivation. E.g. cleaning your room because relatives are coming for a visit; reading your textbook to avoid being scolded by your parents; an office employee working extra hours for bonus etc. In these examples, external factors (visit by relatives, fear of being scolded by parents, bonus) are driving behaviour and not the pleasure of the task itself.

ACTIVITY

Pick any two professions of your choice (e.g. teacher and nurse). Identify ten people each in that profession and find out from them what motivated their choice of that particular profession. From their responses, classify them into two groups on the basis of whether their career choices were driven by intrinsic or extrinsic motivation.

(You can perform the same activity with college going students to identify the type of motivation behind their choice of education stream e.g. arts, science and commerce).

9.4 MASLOW'S THEORY OF NEEDS

Numerous theories have tried to explain motivational behaviour. Among them, the popular theory is the one proposed by Abraham H. Maslow (1968, 1970). His theory is also known as Maslow's theory of need hierarchy. His pyramid model identifies and conceptualizes human needs in five levels of hierarchy. Beginning at the bottom, the

need intensifies as one moves up the pyramid. The basic premise of his theory is that one is motivated to attain higher level needs only once needs at the lower level are satisfied. However, absolute fulfilment of a need is not a pre-requisite to move to a higher level. A person can be at multiple levels of needs at the same time For example, a child can experience physiological needs, safety needs, belongingness needs and cognitive needs as well based on availability of the resources for need fulfilment.

At the bottom lies the **'physiological needs'** which comprise of food, water, sleep, sex, shelter, clothing, clean air etc. Maslow considered them as most important because they are essential for human survival and optimal functioning. In the light of these basic needs, the higher level needs stand secondary. After this comes **'safety needs'** (both physical and psychological). They pertain to security, protection, need for law and order, freedom from fear etc. Next come the **'belonging and love needs'** which involves seeking for a sense of belongingness and affiliation. It can be found in interpersonal relationships like friendships, family and social circles and by sharing of mutual trust, acceptance and intimacy. After the satisfaction of previous needs, comes the **'esteem needs'**. It can be understood as a desire to be in good reputation, prestige, dignity, and feeling of accomplishment. Finally, a person reaches the highest level of need known as **'self-actualization'** which corresponds to achieving one's full potential. A person is considered as self-actualized if he/she has developed awareness, is socially responsible, has creativity and is receptive towards novelty challenge and growth. According to the theory, only few people are able to reach the highest level, whereas most people remain at the lower levels of need satisfaction. Though it is considered as the most popular explanation of motivation, yet one of the major criticisms regards to the hierarchical structure of needs.

Later, three more levels were incorporated in the hierarchy of needs- cognitive needs, aesthetic needs, and transcendence. The level of **cognitive needs** was added after the esteem needs, and refer to the need of attaining knowledge, to widen their intellect, and to explore their surroundings for developing better understanding. Higher to this level, **aesthetic needs** were placed. A person's need for recognizing and appreciating love and beauty and for having balance and harmony in his/her life, comprise the aesthetic needs. **Transcendence** was placed on the top of self-actualization needs, thus acquiring the highest position. It can be understood as search for spiritual knowledge beyond self. Transcendence also involves facilitating others to reach their maximum potential.

Transcendence

Self-Actualization

Aesthetic Needs

Cognitive Needs

Esteem Needs

Belonging and Love Needs

Safety Needs

Physiological Needs

Fig. 9.2 Hierarchy of Needs

Though Maslow called it 'hierarchy' of needs, one does not essentially moves upward in these levels. There are times when people fall down to the most basic needs even after being at higher levels. For e.g. after a natural calamity, like tsunami, or losing a job, people at higher levels come back to fulfilling their basic needs. Maslow also talked about peak experiences where a person temporarily experiences growth and self actualization at various points in life.

INTEXT QUESTIONS 9.2

1. Shubham is given a chocolate after he clears every exam. This is an example of

   (a) Intrinsic reward　　(b) Drive behaviour

   (c) Need satisfaction　　(d) Extrinsic motivation

2. Match the following

(a) Creativity	(i) Physiological need
(b) Peaceful living	(ii) Self-actualization
(c) Social prestige	(iii) Belonging need
(d) Footwear	(iv) Safety need
(e) Trade unions	(v) Esteem need

9.5 RELATIONSHIP BETWEEN ASPIRATION, ACHIEVEMENT AND HUMAN EFFORT

Aspirations refer to goals that stem from the desire for more than what is in the present. It finds relation to achievement because aspirations drive people to want to achieve more or have more than they possess. They may be positive (like aspiring for success) or negative (like wanting to avoid failure), intrinsic or extrinsic, realistic or unrealistic. However, having high aspirations and being highly motivated alone does not guarantee attainment of goals. A third factor called human effort is an essential contributor to reaching our aspirations. Human effort or behaviour may be guided by physiological functioning as well as influenced by socio-cultural environment. Further, individual differences will cause variations in the levels of aspiration, the motivation to achieve and ultimately the amount and nature of effort they put towards different tasks.

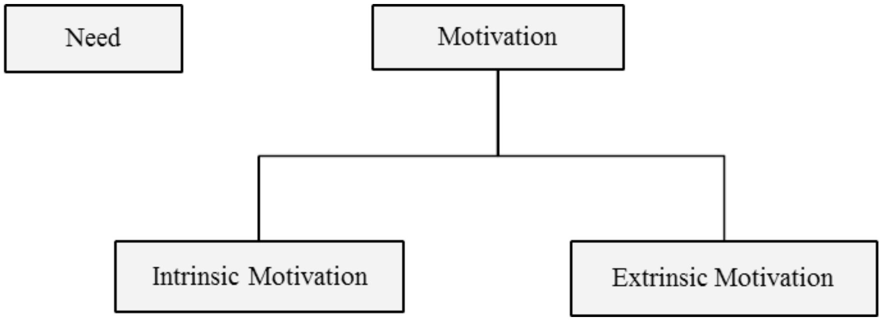
Let us close this chapter by going back to the example of Asif in the beginning of this chapter. Asif has set his aspirations high to become a cricketer like Tendulkar when he grows up. He is highly motivated towards his dream and has enrolled himself to a cricket academy near his house. However, his success will be greatly dependent on the consistency of his training and his maintenance of personal discipline to keep his body fit, which make up his efforts. In this way, aspirations, achievement and effort must go hand in hand in driving our motivation and behaviour towards attaining our goals.

Assessment of Motivation

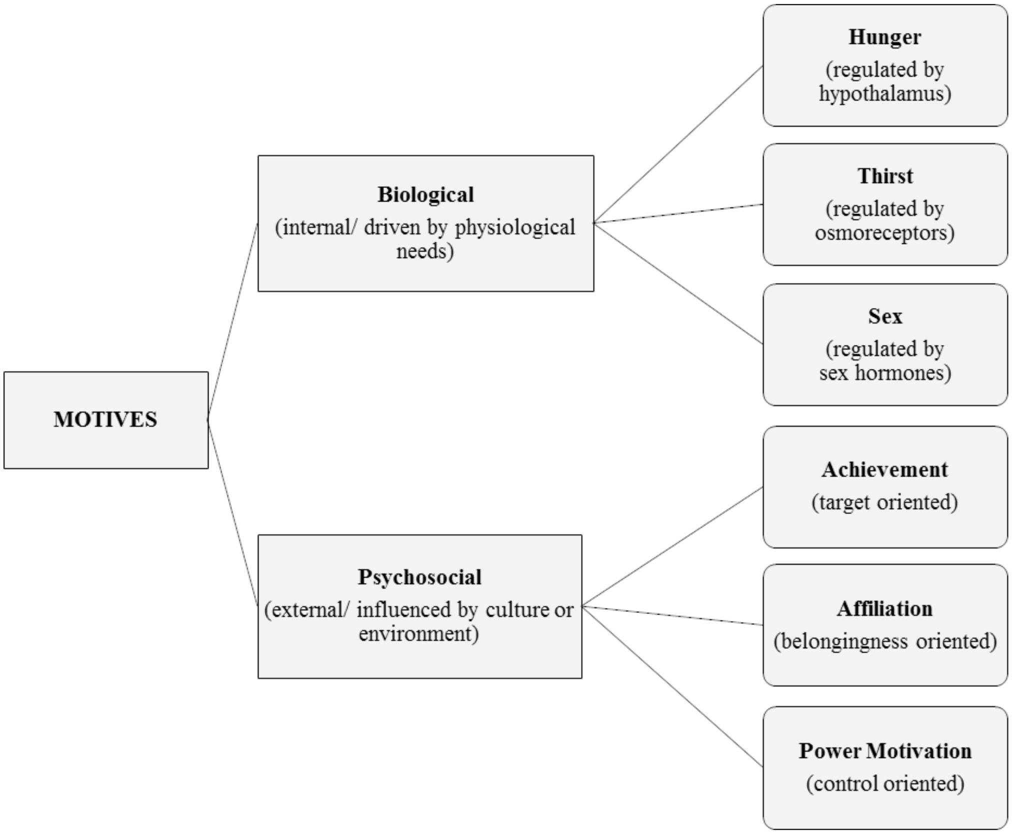
Thematic Apperception Test (TAT) is a psychological tool that is widely used for assessment of motivation in individuals. The test involves a series of ambiguous pictures to which the participants are asked to make up a story on each picture. The basic assumption behind the test is that the participant projects his/her own needs in the process of creating the story. The responses are then scored in accordance with scoring manuals to provide individual scores in the area of achievement, affiliation and power needs. TAT has been used extensively in employment sector for selection of candidates especially in fields that involve high degree of psychological stress and require excellent people skills like law enforcement, leadership in military, ministry of education etc.

WHAT YOU HAVE LEARNT

Kinds of Motivation



Types of Motives



TERMINAL QUESTIONS

1. Describe the concept of motivation.

2. Explain the cycle of motivation.

3. Discuss the biological needs of human behaviour.
4. What are psychosocial motives? Discuss briefly.
5. Distinguish between intrinsic and extrinsic motivation.
6. Explain Maslow's need hierarchy.
7. What is TAT? How it is used in psychological assessment?
8. Illustrate the relationship between aspiration, achievement and human efforts.
9. Does essentially everyone moves upward in the Maslow's hierarchy of needs?
10. What will happen if our primary and secondary needs will not be fulfilled ?

ANSWERS TO INTEXT QUESTIONS

9.1

1. (a)
2. (a)
3. (b)
4. (d)

9.2

1. (d)
2. (a) (ii)
   (b) (iv)
   (c) (v)
   (d) (i)
   (e) (iii)

10

EMOTION

One afternoon Reema was sitting with her best friend. While they were in the middle of a conversation, Reema's brother came and informed them that their board results are out. The moment they got the news their heart beat increased and they went running to check their marks. Reema was very happy as she scored 98% however, she could feel that her friend looked upset about getting only 75% marks. When she saw her friend's reaction, she kept her excitement aside and started consoling her friend. On one side she was very happy while on the other hand she felt sad for her friend. She expressed her excitement and celebrated her achievement with her family only after her friend left. She felt very content as her family showered her with compliments for her achievement and for making them proud.

The above example gives us an idea about how a person can experience happiness and sadness simultaneously at the same time. It also tells us about different emotions an individual can experience in a short span of time and how it is important to regulate our emotions according to the situation.

Humans are emotional beings. We experience a plethora of emotions including happiness, love, sadness, sorrow, pride, excitement and many more in our daily lives. It is a medium through which we express and interact with others. We feel happy when our teachers praise us for our hard work and we feel sad when our parents scold us for wrong things that we do, or have done. In this lesson we will study what emotion is, the theories of emotions, how emotions are expressed and how they direct our behavior.

LEARNING OUTCOMES

After studying this lesson, learner :

- explains the nature of emotion;
- describes the theories of emotion;
- explains the physiology of emotional experience;
- describes various expressions of emotions;
- understands types of emotions; and
- identifies different ways of managing emotions.

10.1 NATURE OF EMOTION

The term 'emotion' is derived from the Latin word 'emovere' which means to stir up, agitate, excite or move. Emotions are generally referred to as subjective feeling and affective reactions in response to a situation we perceive to be personally significant. .

Every emotion has three basic components:

1. **Physiological:** Each emotion is accompanied by some physiological activation in the brain, the nervous system and hormones, so when you are emotionally aroused your body is aroused too. For example your heartbeat, palpitation and sweating increases when you are very angry.

2. **Cognitive:** It involves thought, belief and expectations with which we evaluate and interpret the situation. For example, when you are happy you decide with whom you should share the news and with whom you should not.

3. **Behavioral:** Emotions are also expressed in behavior in terms of facial expression, posture, gesture and vocal response. For example, if you are scared you either fight or run away from the situation.

ACTIVITY

Try to remember a recent event when you felt anxious. Note down changes that you observe within yourselves

Physiological	Cognitive	Behavioral
______________	______________	______________
______________	______________	______________
______________	______________	______________

10.2 THEORIES OF EMOTION

In Psychology, various attempts have been made to study emotion. Over time, several theories of emotions have been proposed to explain and formulate some general principles to guide us in understanding more about emotions. Theories have also been developed to explain the mechanism of emotion. We will be studying three major theories of emotion in this section

1. The James-Lange theory of emotion
2. The Cannon-Bard Theory of emotion
3. The Schachter and Singer theory of emotion

The James-Lange theory of emotion suggests that emotional experience arise from our perception of physiological changes. For example, when one sees a snake, his/her heart races and muscles get tense, and thus he/she feels scared.

Event → Physiological changes → Perception of physiological changes → Emotion experienced

Fig 10.1: The James-Lange theory of Emotion

The Cannon-Bard theory of emotion says that the physiological arousal and emotional experience occur simultaneously, yet they are independent of each other. For instance, on seeing a snake, one feels scared (an emotional response). At the same time his/her heart beat increases (a physiological reaction). Cannon-Bard suggests that both these emotional and physiological reactions will co-occur, even though they would be separate and independent.

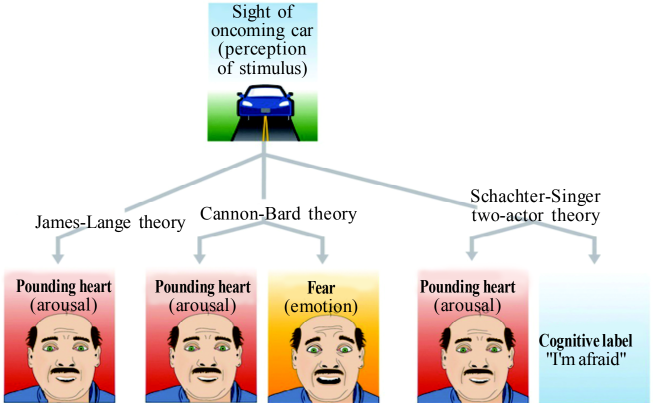


Fig. 10.2: The Cannon-Bard Theory of Emotion

The Schachter-Singer theory of emotion maintains that emotions compose of two factors: physiological and cognitive. In other words, it suggests that the emotion we feel is due to the cognitive interpretation of aroused bodily state. Using the same example, on seeing a snake, one's heart races (a physiological reaction). There is also an apprehension that the snake might bite (cognitive interpretation). Both these reactions contribute to the emotion of fear.

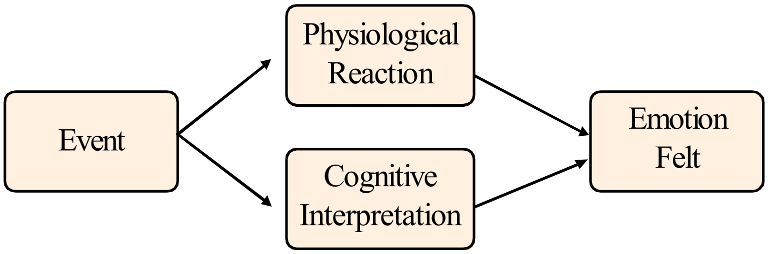


Fig. 10.3: The Schachter-Singer Theory of Emotion

INTEXT QUESTIONS 10.1

Fill in the blanks

1. __________________ is a part of the brain involved in controlling of physiological expressions of emotions such as fear, anger and pleasure.
2. The involuntary body functions such as heartbeat, breathing, blood flow and digestion are regulated by __________________
3. The Schachter-Singer theory of emotion suggests that emotions compose of ____________________ and cognitive factors.
4. ____________________ is one of the most important non verbal body cues.
5. The component of emotion is expressed in the form of facial expression & gestures.

10.3 PHYSIOLOGICAL BASIS FOR EMOTION

Seema wants to score well in her board exams. She has prepared herself well and feels confident. As she enters the viva room and the external examiner asks her questions, she becomes extremely nervous. Her heart palpitation increases, breathing increases, her feet become cold and she is not able to respond appropriately.

Can you remember any such similar situation that happened to you? Why did this happen? Have you noticed when we are excited, terrified or angry; emotions also cause strong physiological response? The physiological activity is regulated largely by automatic nervous system.

1. **The Autonomic Nervous System:** it is the part of the peripheral nervous system that is in charge for regulating a variety of involuntary body functions such as heartbeat, breathing, blood flow and digestion. It consists of many nerves leading from the brain and spinal cord to muscles of various organs. The automatic nervous system can be divided into two parts.

   i. **The Sympathetic Nervous System:** The sympathetic nervous system regulates flight-or-fight response and prepares our body for emergency actions. It is active during aroused state and prepares the body for extensive action by speeding up the heart rate, raising blood pressure, dilating eye pupils and raising blood sugar levels.

   ii. **The Parasympathetic Nervous System**: It tends to be active when our body is in a calm and relaxed state and helps the body to store energy for future use. It helps in maintaining normal body functions, build up and conserve our physical resources by slowing down heart rate, decreasing blood pressure, constricting eye pupils and maintaining blood sugar levels. For example, if we see a snake, our response is to flee. For this the sympathetic system will quickly activate our body to take action. Once the threat has passed, the parasympathetic system will then start to diminish these responses, slowly returning our body to its normal or resting state.

2. **Adrenal glands:** These glands are located on the top of kidneys and secrete epinephrine (adrenalin) and norepinephrine (noradrenaline) hormones. It is activated when the nerve impulse in the sympathetic system activate the inner part of the adrenal gland, trigger the secretion of adrenaline and noradrenaline into the blood stream. When the brain senses danger, the instant fight-or-flight response stimulates the hypothalamus to send signals through sympathetic nervous

system to release greater amount of adrenaline. Functions of adrenaline include mobilizing blood sugar into blood, increasing the heartbeat, blood pressure and slowing down of digestive process. These glands play a significant role in preparing the organism for emergency reactions, when we are charged with emotions.

3. **Hypothalamus:** It is a core part of the brain mainly involved in regulation of physiological expressions of emotions such as fear, anger and pleasure. It sends impulse to muscles and glands. The automatic nervous system in conjugation with hypothalamus, regulate breathing, pulse rate, blood pressure and arousal in response to emotional cues. A person may become incapable of experiencing any emotion if their hypothalamus is injured.

INTEXT QUESTIONS 10.2

State which of the following statements are 'true' or 'false'.

1. The parasympathetic nervous system regulates our body for emergency actions.
2. Verbal and non verbal communications are interdependent on each other.
3. The James-Lange theory of emotion suggests that emotional experience arise from physiological changes.
4. "I" message technique is for expressing intensely positive emotions.
5. Anxiety can sometimes help us to take certain action to avoid dangerous situation.

10.4 EXPRESSING EMOTIONS

Emotion is a sensory experience through which we influence others with our feelings. It has a great impact on others if expressed in a way that can be perceived well by others. We also perceive the emotional responses of other people and respond in appropriate way.

We communicate our feelings and decipher the feelings of others constantly. Emotions are expressed in a number of different ways involving both verbal and non-verbal channels.

i. **Verbal communication**: It comprises of spoken words as well as features of speech such as tone, pitch and loudness of the voice. Laughter denotes joy, screams denote fear or excitement, groans indicate pain or unhappiness, and high-pitched, sharp voice denotes anger. Sharing our feelings is sometimes risky as it can make us vulnerable to the judgment of others.

ii. **Non-verbal communication**: Facial expression is one of the most important nonverbal body cues. Some emotions are too complex to be represented only on our faces. Thus, facial expression along with gestures (body language), posture, and personal space, touch, etc. gives us the cues to what other might do next.

According to Paul Ekman (1969) verbal and non-verbal messages are interdependent with each other. Communication becomes more effective when both verbal and non-verbal communication skills are used well. For example, a joke becomes funnier when told with gestures than just telling the joke. Nonverbal communication can directly or indirectly affect our verbal discourse in the following ways: Non-verbal communication can be used to emphasize our words and repeat what we say. It can substitute the words, regulate speech, contradict what we say and compliment the verbal content of our message. Non-verbal signals are helpful in clarifying the words we use and disclose the true meaning of our feelings.

It is easier to hide our feelings by not verbally speaking to other but paralanguage speaks out our innermost feelings. We generally share our intimate feelings with our close friends

Culture and Emotional Expression: Does culture determine the type of emotions we experience? How does culture shape our personality? Charles Darwin (1872) in his book “The Expression of the Emotions in Man and Animals” said that emotional expression in humans is both innate and universal across cultures. Eckman (1970), a famous psychologist has also documented that the basic emotions conveyed by facial expression are similar across cultures. He identified six basic emotions that are universally experienced and recognized in all human cultures. These are happiness, sadness, fear, surprise, disgust, and anger. Other emotions are experienced as a result of combination of these basic emotions.

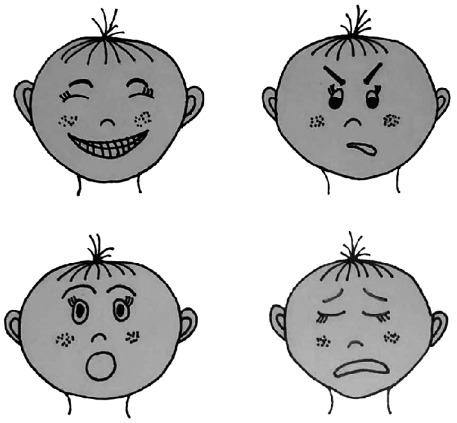


Figure 10.4: Facial Expressions of Emotions

Culture has a major influence on how we express and interpret our emotions . Some cultures promote free expression of emotions, whereas others emphasize on revealing less emotions in public. Silence has been found to convey different meanings. In India, deep emotions are sometimes expressed by staying silent. However, in Western countries it may mean embarrassment. For instance, the thumbs-up sign is represented as 'A-Okay' or nice job in United States but assumes a derogatory and offensive interpretation in some Latin American cultures.

10.5 MAJOR EMOTIONS

We experience several emotions in our day to day life. Some emotions are associated with positive feelings while others with negative feelings. However, both are equally important and play a significant role in the understanding of our and others' experiences.

The following major emotions will be studied in detail.

Sadness: A negative emotion that is often seen as the opposite to happiness. Sadness is a feeling of disappointment and grief induced as a result of non-accomplishment of goal or losing something important, such as a material possession, (e.g. losing your favorite shirt, money), pleasure (e.g. not being able to watch movie due to exam), or a meaningful relationship (e.g. going through a break up) or social status (e.g. cease to be admired). It is experienced by all of us from time to time. Sadness can be expressed by crying, quietness, lethargy, dampened mood and withdrawal from others. In some cases, people can experience prolonged and severe periods of sadness; if not managed properly it might later turn into depression.

Anxiety: A feeling characterized by tension, constant reoccurring of intrusive thoughts or concerns and physical changes like increase in blood pressure. It serves as an emotional alarm signal, warning us of threat or danger. When the threats are real, moderate level of anxiety can encourage us to take certain actions to avoid the trouble. For example, fear of examination motivates us to read and prepare ourselves well for exam. However, high level of anxiety can distort our perception and thinking, thus impairing our performance.

Yerkes-Dodson's law suggests a relationship between arousal and performance and states that in a moderately difficult task, performance increases with physiological arousal, but only up to a certain point. When the arousal becomes too high, performance decreases. The phenomenon is often demonstrated graphically as a bell shaped curve as shown in the figure below.

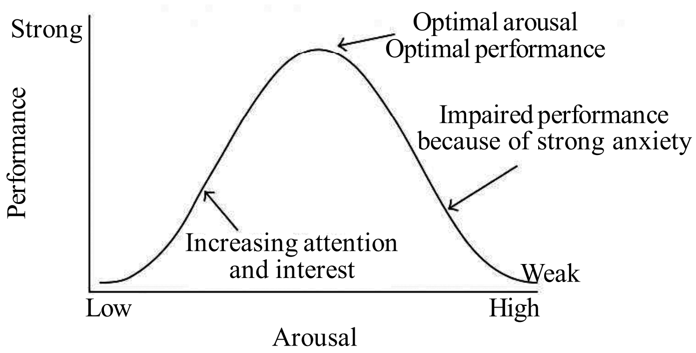


Figure 10.5: Yerkes-Dodson's Law representing relationship between anxiety and performance

Anger: Feelings of displeasure or resentment over mistreatment. It is a powerful emotion characterized by feeling of hostility, agitation and frustration towards other. It can trigger fight or flight response. Anger is often displayed through facial expression, body language, tone of voice, physiological responses and aggressive behavior. If anger is not controlled, it can become unhealthy, harmful to others as it might easily turn into aggression or violence. Anger is often linked to heart disease and high blood pressure. Anger is often thought of as a negative emotion; however, it can sometimes be a good thing. It can be constructive in helping clarify our needs in a relationship, and it can also motivate us to take action and find solutions to things that are bothering us.

Jealousy: it involves fear of losing something (relationship, promotion, friend etc.) to someone else. It generally happens when a person perceives a threat to a valued relationship from someone else. The threat may be real or imaginary. It is an anticipatory emotion that seeks to prevent loss and help take precautionary measures. It is not restricted to only romantic relationship; it can happen among co employees in an organization, among friends, and among siblings competing for parental affection and attention. It may lead to emotional disturbances such as disappointment, anger, depression etc. Jealousy isn't necessarily a bad thing. We can't run away from this emotion as it is also a significant part of our human nature. It's natural to feel jealous on some occasions. It serves as a signal, or wake-up call that a valued relationship is in threat and that certain steps need to be taken to maintain an important relationship and regain the affection and preserve social bonds.

Happiness/Pleasure: it is a psychological state characterized by an increased positive affect, satisfaction and decreased level of negative affect. It is often considered as a reaction to the satisfaction of need or attainment of a goal. Happiness is subjective in nature and varies from one person to another. It is a positive emotion that is induced through experiences, memory or a current state of an optimistic event. When an

individual is happy, he/she tends to have a positive perception of events in life and makes him/her look forward to life. Individual happiness will be reflected in one's behavior. For example, we smile, laugh and there is a clear expression of satisfaction on our face when we are happy. Studies have also shown that people engage more in act of kindness when they are happy. A person in positive emotional state has better cognitive ability, engages in a different kind of behavior with more creativity and productivity.

While expressing happy emotions is generally not a problem for most children, expressing sadness, anger, disappointment and rejection may be an issue. Aggressive display of anger often leads to more violence and creates unsafe situations. Learning to express our emotions in an assertive and respectful manner can help us to be safe and firm at the same time.

Emotions are neither "good" nor "bad". Instead we should think of them as a source of assistance as they help us make sense of things. Emotions are not only a way for our mind to clue us into what's happening; they also convey information to the people around us. For example, if we are sad, we seek for comfort. If we communicate our guilt, we seek for forgiveness.

ACTIVITY

1. List down five things that make you happy.
2. Try to remember a situation when you felt anxious over a presentation and write down your feelings

INTEXT QUESTIONS 10.3

Multiple Choice Questions

i. Which of the following is not Eckman's basic emotion

(a) Happiness (b) Love

(c) Surprise (d) Sadness

ii. What are the main component (s) of emotion:

(a) physiological (b) cognitive

(c) behavioral (d) all of the above

iii. Happiness is a psychological state characterized by,

(a) an increased positive affect (b) a decrease in negative affect

(c) life satisfaction (d) All of the above

iv. Jealousy is an emotion, predominated by:

(a) love (b) happiness

(c) fear of loss (d) disgust

v. The statement "Emotion we feel is due to the cognitive interpretation of aroused bodily state" was given by

(a) James-Lange (b) Cannon-Bard

(c) Schachter and Singer (d) Eckman

10.6 MANAGING EMOTIONS

Emotions exist on a continuum. It is not an all or none phenomenon. Different extents of emotions are experienced by us. You can experience intense excitement or slight joy, severe grief or slight sadness. However, we always try to maintain a balance of all the emotions that we experience and go on with our lives.

Our life is not free from stress and conflicting situations. It is full of problems and challenges. A demanding stressful circumstance can bring forth a lot of unpleasant emotions such as sadness, fear, anxiety, guilt etc. If not dealt properly or prevailed for long time, it may likely negatively affect the physical as well as psychological health of an individual.

We can't really control our emotions but we can control our reactions to those feelings. By enhancing our awareness and self-control, we can learn to manage our emotional reactions effectively.

When you experience intense emotions such as anger, anxiety or disgust, you must recognize your feelings, what bodily changes you are experiencing and express it in appropriate way. Expressing our feelings openly and constructively will help us to clear the misunderstanding and facilitate communication. Many a times, we are not really clear of what we are feeling unless we express it and hear how other people respond.

All our emotions have a purpose. They help us adapt to the different circumstances

and are important for our survival and wellbeing. Thus, we must use different techniques in managing our emotions. Emotional management techniques generally focus on lessening of unpleasant emotions and enhancing positive emotions. There are various ways of enhancing positive emotions. Gordon and Sand (1984) gave "I" message technique for expressing intensely negative emotions. This technique encourages an individual to speak what he/she honestly feels in polite manner so that others listen and cooperate. "I" message is helpful in expressing our feeling about someone whose behavior has hurt you or became a problem. It consists of four components.

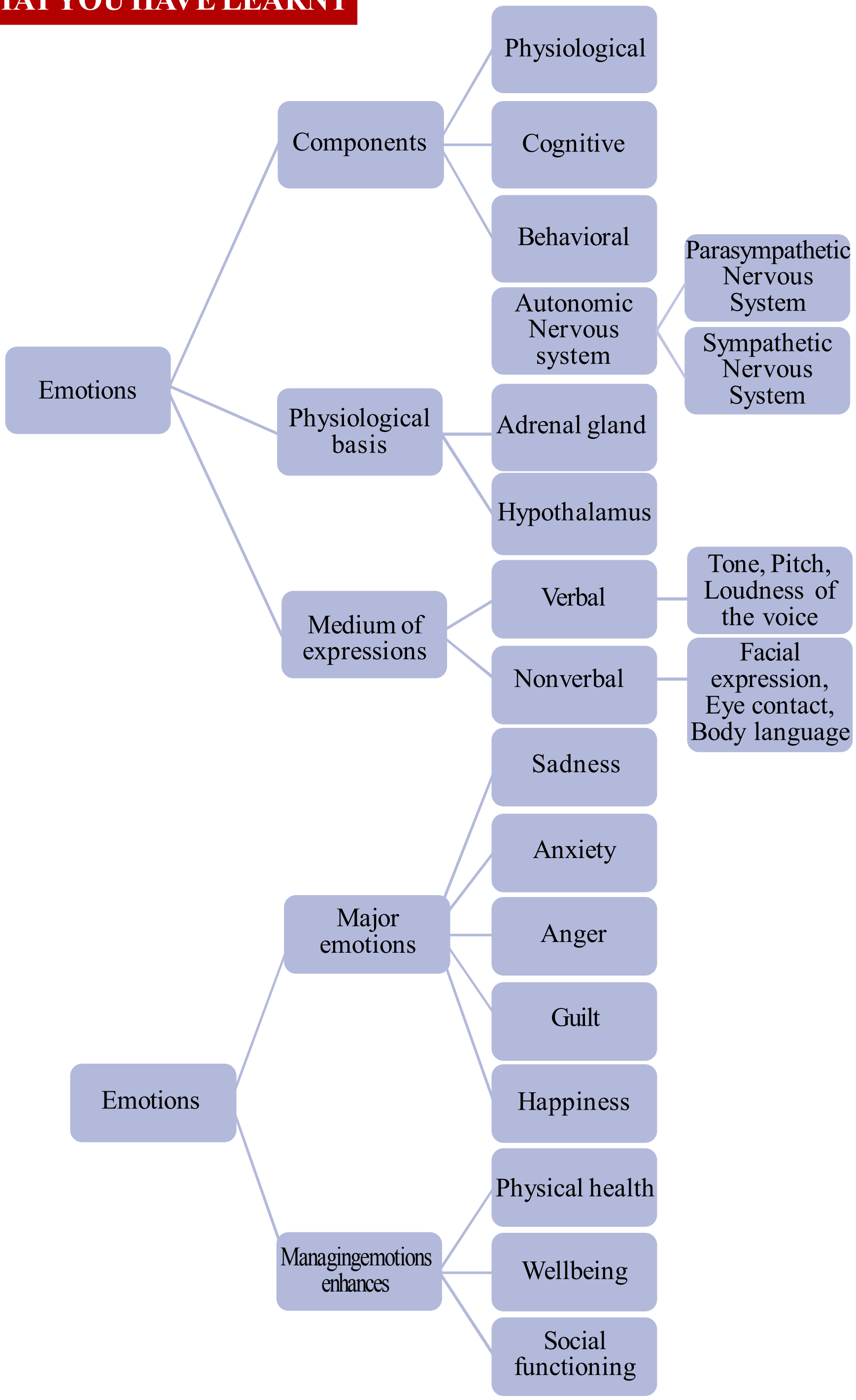
- **The First** component involves telling the objectionable behavior that hurt you in specific way but in nonjudgmental manner.
- **Second,** politely point out to the person in what ways his/her behavior has affected you.
- **Third,** indicate the person how you feel about his or her behavior in terms of emotions you felt. Express your feelings but don't project your feelings to others. For example, you should say "I feel hurt" instead of "you hurt me"
- **Fourth,** tell the person what you want him or her to do to correct the situation.

Enhancing self-awareness, appraising the situation objectively, and self-monitoring techniques can also be used to regulate our emotions. Our ability to express feelings and emotions in appropriate ways can have a huge effect on our physical health, psychological health and wellbeing. Effective emotional management is the key to effective social functioning. An individual who understands and deals effectively with emotions is referred to as "emotionally competent". This means he can express his feelings appropriately in different contexts and has better ability to adapt to the situation. He can identify his own feelings and feelings of others, and can modify his emotion to deal better with certain situations (for example an emotionally competent person will know that his friend is not in good mood so he/she will avoid giving him bad news on such days). Individuals with high emotional competence are more likely to be empathetic as they have the ability to put themselves into the shoes of others and understand how others might be feeling. Because of this understanding they are more likely to help others and to find a way to deal with negative circumstances. Children with emotional competence are likely to do well in school and engage in positive relationships with peers and other people.

While it may be beneficial to try to look at positive side of things, it's important also to acknowledge and listen to our emotions when they are not so pleasant. In fact, paying attention and processing your emotions as they come and go may help you better

understand yourself, and those around you and help you to regulate one's own emotions and to be empathic towards others' emotions.

WHAT YOU HAVE LEARNT



Imagine a situation in which you were very angry and spoke something bad to your friend and later you felt guilty for what you said. How will you resolve the issue with your friend?

TERMINAL QUESTIONS

1. Why do we have emotions? What role do they serve?
2. What are your primary emotions? What emotions do you think you express most freely and frequently?
3. Explore the effects of anxiety on your life.
4. When you feel jealous, how do you usually express and behave?
5. Explain the different theories of emotions with diagram.
6. Analyze the Autonomic Nervous System and what role does it play?
7. What are the different ways by which we can manage our emotions?
8. How does culture influence our expressions and emotions?
9. Explain Yerkes-Dodson's Law and analyze the relationship between anxiety and performance.
10. Why expressing our emotions and feelings are important?

ANSWERS TO INTEXT QUESTIONS

10.1

1. Hypothalamus
2. Autonomic Nervous System
3. Physiological factor
4. Facial expression
5. Behavioural

10.2

(1) False (2) True (2) True (2) False (2) True

10.3

1. b) 2. d) 3. d) 4. c) 5. b)

11

THINKING AND PROBLEM SOLVING

Imagine the last thing you do when you are about to sleep, it is remembering what have you done today and planning what to do tomorrow. Similarly, the first thing you do when you wake up is thinking what all you would be doing today. Both these situations portray how there is not even a single minute when you are actually not thinking. When you go out for shopping, doing laundry, making breakfast, presenting your work to your boss, taking medicines and the list goes on. Even while sleeping our mind is restless and we keep on thinking until we go in rem sleep.

Hence, it becomes very important to understand varied concepts under thinking and cognition.

LEARNING OUTCOMES

After studying this lesson, learner :

- understands the nature of thinking;
- identifies the processes underlying thinking;
- elaborates upon the process of creative thinking;
- analyses the relationship between language and thought; and
- Applies reasoning, problem solving and decision making skills on one self.

11.1 NATURE OF THINKING

Our life revolves around understanding things, people and situations. Most of our waking time goes into thinking, reasoning, deciding, solving problems etc.Hence, it becomes very important to recognize what goes around during these processes.

Cognition is the general term used to connote all the higher order mental processes. It is the umbrella term, which includes different mental activities associated with thinking, decision-making, language, memory and other higher order mental processes.

Most of humans waking hours, even sleeping and dreaming involves thinking. It is nearly impossible not to think. While reading this portion on thinking, your thoughts and cognitive processes are at work. Even when you stop reading it, your thinking would shift to something else perhaps to what you would be doing next or tomorrow but it never stops.

Human Thinking involves processing, organizing and managing information. It involves all those processes which fall between reception of a stimuli to production of a response. Hence it requires cognitive rearrangement or manipulation of information from the surroundings or environment along with the information stored in memory including symbols, concepts and images. A symbol or an image represents any event or situation in the environment.

Consider a simple activity of buying a watch. You collect information about various brands, their prices and quality (stimuli) and you end up buying any one (response).

Thus starting from collecting, comparing and organizing all the information until you reach a final decision is called thinking.

- Some thinking is highly private and may use symbols having personal meaning. Such thinking is called as Autistic Thinking. Example, day dreaming.
- There are certain other types of thinking which are only aimed at solving problems or creating anything novel or new, this comes under Directed thinking. Example, finding way to reach a particular place.

The symbols that we use in thinking are often in the form of concepts, images, words or propositions. Hence the major elements of thinking are- concepts, imagery and proposition. Let's start by understanding each one by one.

11.1.1 Concepts

Concepts are important language symbols used in thinking. A concept is the symbolic construction that represents some common and general features of different objects and events.

E.g.: Concept of age, color, love, mother etc.

Most of the nouns in our vocabulary are names of concepts. The main aim of concept formation is classification of objects into categories. These are mental categories for varied experiences, ideas, events, situations and objects.

The feature or features we select define the concept and form the basis for making classifications. When a classification has been made, we tend to behave towards it and think about members of class in similar ways. Concepts make sense of the world around us.

E.g.: Knowledge that apple is a fruit and table is not, comes from different categorization in form of concept.

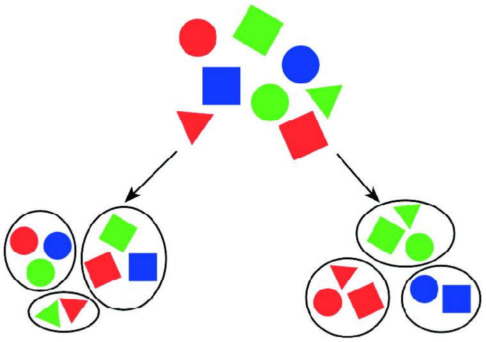


Figure 11.1: Concept Formation

Categorization in the concept formulation

There are different categorizations of concept. The major one is - Logical/ Artificial Concept- This is the one that can be easily defined by set of rules or properties. E.g., a square is a square when it has 4 equal sides and 4 equal angles (90 degree angle).

Natural concepts- These are not based on clear-cut precise set of attributes. There boundaries are not clear or readily specified set of defining features. Yet natural concepts more accurately reflect the aspects of natural world. Nature concepts are often based on Prototype. Prototypes emerge from our experience with the external world and new items that might potentially fit within their category are then compared with them,

Notes

the more attributes new items share with an existing prototype, the more likely they are to be included within the concept. E.g., when we think of fruit we think of apples never tomatoes where as both are fruits.

Generally, concepts are represented in terms of their features or attributes but natural concepts in part could also be represented in form of visual imagery (Mental representations of objects or events)

ACTIVITY

Think of two natural concepts from your life and come up with their prototypes.

11.1.2 Images

Thinking often involves manipulation of visual images. Research clearly shows that mental manipulations performed on images of objects are nearly similar to those that would be performed on the actual objects.

Example, when asked to form an image of a play school, we will think of different areas of the school with all the toys books, play equipment in playground, the paintings on the wall etc.

Images are therefore representations of information from the environment or our experiences of the environment that someone can use at a later point of time. Generally, these ae stored in our memory.

Concepts are also closely related to Schemas, cognitive frameworks that represent our knowledge and assumptions about the world. Generally, schemas are more complex and include many different distinct concepts. E.g., Schema of God (it includes spirituality, religiosity, concept of idol worship etc.)

Therefore, concepts may be represented in the mind in several ways and make sense of the complex external world around us.

11.1.3 Propositions

Propositions are statements that either state one concept or relationship between concepts. Thinking involves relating one concept to another or one feature of a concept to the entire concept. As human beings we possess highly developed language skills, these cognitive actions take the form of propositions- sentences that relate one concept to another. E.g., "Sita has black hair". Over here, there is description of relationship

between a concept and its properties.

Cluster of propositions are represented as Mental Modals (knowledge structure that guide our interactions with objects and events in the world around us).

11.1.4 Role of Culture in Thinking

Psychology sees mind and culture as inseparable. They are mutually constitutive. People are not only shaped by their culture but their culture is also shaped by them, so the influence is two way. Individuals thinking can impact and formulate different cultural norms and these norms in turn can influence the thinking pattern and behavior of an individual. The way we reason, what all we reason, memorize and how much importance we give to different choices while decision-making; all are influenced by our cultural practices and norms. For E.g., in a cultural setting where females are suppressed and live in a patriarchal setting, a choice between family and career might lead to family conflicts.

Thinking involves varied processes for goal attainment. The most important ones are- Problem Solving, Reasoning and Decision Making.

INTEXT QUESTIONS 11.1

Fill in the Blanks:

1. _____ thinking is highly private and may use symbols having personal meaning.

2. Sentences that relate one concept to another are called __________.

3. ________ concept does not have specified set of defining features.

11.2 PROBLEM SOLVING

Problem solving is goal directed behavior. It is motivated by the need of a person to reduce the discrepancy between one state of affairs and another.

In simpler terms problem solving could be seen as efforts to develop or choose among various responses in order to attain desired goals. Problem solving process moves through various stages to attain the desired goals:

- **Framing and understanding of problem-** Recognizing that a particular problem exists and then figuring out what issues need to be solved.

- **Generation of hypothesis or possible solutions-** Hypothesis is tentative answer to a problem. This process needs higher order thinking, collecting information, matching existing information and then coming out with the potential solutions.
- **Testing the hypothesis-** Now comes, the evaluation of each alternative or possible solution. The cost associated with each solution is graded and then the best possible one is used.
- **Evaluation of results and revision of earlier steps wherever needed-** Once the solution is applied, it becomes important to evaluate the results and if the desired results are not achieved then revision to the earlier steps is to be done.

11.2.1 Methods of Problem Solving

Simplest problem solving approach is **Trial and Error** (Here, different responses are tried till one works).

Second involves the use of **Algorithms** (these are precise sequences of procedures that automatically generate solution if followed in a particular manner).

Third, one is **Heuristics** (these are general rule of thumb, which are based on prior experiences and are mental shortcuts, which may or may not lead to the desired solution).

Next one is **Analogy** (the application of techniques that worked in similar situations in the past- Many a times, we use similar ways to tackle situations which we have somewhat resolved in past. E.g., like if we are hungry and it is late at night, we know that at highway there are chances to get food).

Last is **Means-end Analysis** (problem or goal here is broken into sub goals and path is laid to solve the problem in a stepwise manner. The problem solver perceives the end first and then looks for the diverse strategies, which could lead towards that end. Hence, it is a form of backward thinking, which starts from the goal then leads to the strategy to reach that goal in the present situation).

ACTIVITY

Identify any recent problem in your life and try to solve it using Algorithm, Analogy or Heuristic.

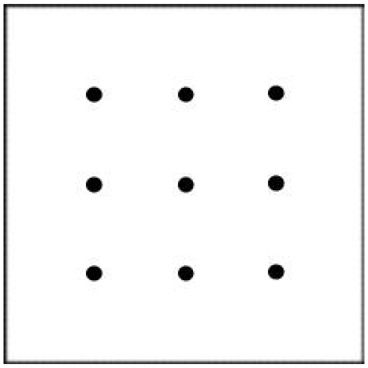
11.2.2 Barriers to Problem Solving

Mental set- When you solve a problem in a one particular way, it becomes a set. These are already tried mental operations or steps. This could lead to success in some situation but could also create a kind of mental rigidity that acts as a hindrance to think in new ways, rules and strategies for problem solving.

Functional fixedness- It means seeing the functions of a particular object or thing only as it has been used before. Here fixation occurs as we are fixed on a thing's usual function. It is our strong tendency to think of using objects only in ways they have been used before.

Mental Set

Draw 4 straight lines so that they pass through all nine dots without lifting your pencil from the page. Here mental set becomes a hindrance.



Overcoming Functional Fixedness -
Using hanger for a different purpose

Figure 11.2: Examples of Barriers in Problem Solving

11.2.3 Overcoming hindrances in problem solving

Mental set and functional fixedness decrease the capacity to solve problems in diverse manner. It is important that creativity be enhanced at each stage of life to deal with these barriers. **Brainstorming** (person look for many ways to deal with a situation and find large number of solutions to it) could be helpful to overcome functional fixedness. Breaking down problems into parts rather than perceiving them as whole, could be another useful way. **Cultural training** and **early parental practices** are the best way, through which an individual can minimize barriers in problem solving.

11.3 REASONING

Whenever we see a particular behavior, we try to judge about the causes behind that behavior. Like a woman crying in metro, you could attribute she had a fight with her husband or is unwell or something bad has happened in her life. All these are part of reasoning. Reasoning is the cognitive activity in which we transform information in order to reach specific conclusions.

There is a process of reasoning which make a distinction between formal reasoning and everyday reasoning.

Formal reasoning involves specific method; it is used in formal setting or straightforward problems or situations.

Everyday reasoning is involved in our daily lives. This is more complex and less defined and involves different possible reasons in varied quality and effectiveness. Our everyday reasoning involves higher use of mood and beliefs. Hence, sometimes it reduces our ability to reason.

11.3.1 Types of Reasoning

Deductive- It begins with an assumption. Here, we start with general assumption that we know or believe and move down to drawing specific conclusions. It is reasoning from general to specific. E.g: You know that women generally cry, when they have a fight with their husbands hence, you assume that this woman is also crying because of this reason whereas this may be or may be not true.

Inductive- This kind of reasoning is based on specific facts and observation. Here, we draw general conclusion based on particular observation. E.g.: Concluding that all females cry after fight from seeing just one or two incidences. Here we compare and predict.

Hence, reasoning could be seen as a process of gathering and analyzing information to arrive at conclusions. Here, judgment is made by evaluating events and coming out with appropriate decision.

INTEXT QUESTIONS 11.2

1. Match the following

   i. Algorthim   a. based on specific facts and observation

ii. Heuristic — b. solving a problem in one particular way

iii. Inductive Reasoning — c. general rule of thumb

iv Mental Set — d. precise sequences of procedure that automatically generate solution if followed in a particular manner

11.4 DECISION MAKING

It is the process of choosing among various alternatives any one, while rejecting some options. In simpler terms, it is a kind of problem solving in which we are presented with several alternatives, from which we choose the best one.

It is a process of choosing among various courses of action or alternatives and a rational decision is made after taking into consideration- Both the Utility and the **Subjective Probability**

- The utility or value of the outcomes that each alternative might yield.
- The probability that such results would actually occur.

People generally make decisions that will maximize their subjectively expected utility. In other words, given a choice among alternatives, we consider utility and subjective probability, multiply them together, and take the alternative with the highest product.

11.4.1 Stages of Decision Making

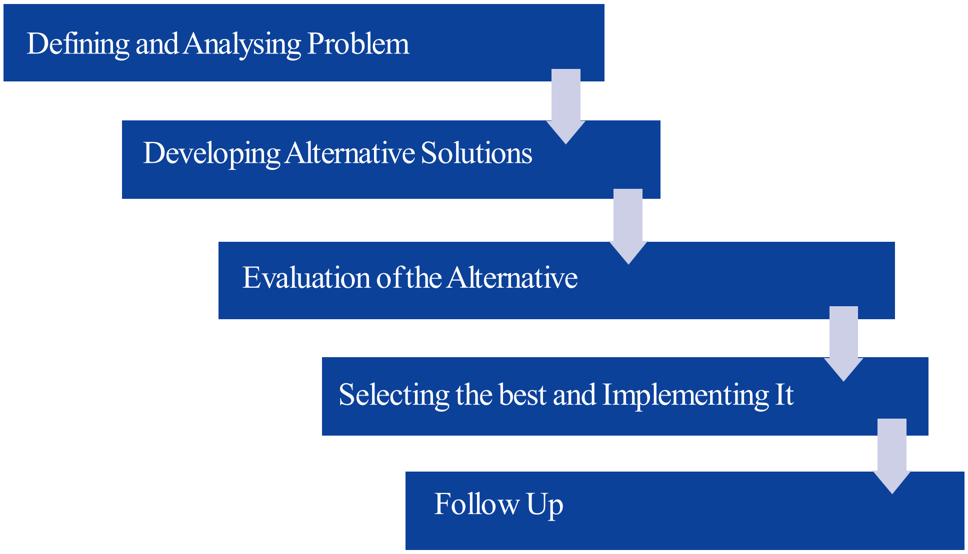


Figure 11.3: Process of Decision Making

11.4.2 Barriers to Decision Making

There are various factors that influence the decision-making process making it less effective. These act as barriers to decision making. The common barriers are:

- **Lack of Information -** Wrong information or partial information always leads to bad decisions.
- **Lack of Context -** Not knowing the actual context of the problem leads to mismatch between the problem and the solution.
- **Lack of Feedback -** It is important to follow up the solutions applied and decisions made so that in future similar mistakes are not repeated.
- **Information Overload -** Too much information about a problem may also lead to hindrance in decision-making, as the time and effort are limited resources.
- **Cultural Barriers-** Cultural norms and practices could also act as a barrier in effective decision-making.
- **Overconfidence-** Confidence over one's decision is important but overconfidence without being calculative of the risk factor leads to a bad decision.
- **Confirmation Biases -** Here, a person looks for, explores, and interprets information, which confirms their beliefs and ideology. This leads to a hindrance in both divergent thinking and critical analysis of a problem and eventually leads to a incorrect decision.
- **Escalation of Commitment-** Tendency to become increasingly committed to wrong decisions even as losses associated with them increase.

ACTIVITY

Remember any conflicting situation where you had to choose between options- Now follow the stages of decision-making and think how you came up with the best option.

11.4.3 Heuristics

Heuristics as discussed earlier are the mental rules that permit us to make decisions and judgments in a rapid and efficient manner. Heuristics make our decision making easier. These cognitive shortcuts reduce our efforts but may or may not necessarily

enhance the quality or accuracy of our decisions. Heuristics are extracted from our experience and acts as simple guidelines for making reasonably good choices quickly. The most frequently used heuristics are:

1. **Availability-** It is the tendency to make judgments about frequency or likelihood of event in terms of how readily examples of them can be brought to mind.

   E.g., study conducted by **Kahneman (1974)** wherein the participants were given list of names and then asked whether the list contained more men or women names. Although the numbers of male and female names were nearly equal but 80%, participants reported that women names appeared more frequently. The reason was that the female names on the list were more famous ones, so their names were remembered easily.

2. **Representativeness-** This type of Heuristic suggests that more closely, an event or object resembles typical examples of some concept or situation; the more likely it is to belong to that concept, situation or category. Here, it is seen whether the current situation is a representation that has already been experienced.

   E.g., if we meet someone new who always wears formals and you are asked to judge the person's occupation. You would first remember your past experiences and then assume that formals are generally worn by teachers so he must be a teacher but you eventually learn that he is a Chef. Therefore, the availability or the similarity among the situation leads to such a decision.

3. **Anchoring and Adjustment-** Here, we start with a certain subjective probability and raise or lower it depending on the circumstances. When we make these adjustments, the outcome depends upon the starting point. If we start with a high estimate, even if we adjust it downward our probability estimate will be higher than if we started with a low estimate. It is as 'if' the initial level provided an 'Anchor' that biased our estimate and therefore this biasing effect is called anchoring.

   E.g. study by Kahneman, one group of people were asked to estimate 8x7x6x5x4x3x2x1 in 5 seconds. The other group in the same time has to estimate the product of 1x2x3x4x5x6x7x8. As they had different anchor, the first group gave higher product and the second one a much lower product whereas both product would be same, the anchoring biases is clearly visible.

4. **Attribute Substitution-** Another name of this heuristic is Substitution Bias. Here, person solves a problem by placing incorrect substitution. They unconsciously substitute a hard problem for an easy one. Whatever is available to the mind is chosen rather then what is needed.

E.g., Optical Illusions are the best examples of such substitution. In day today life, we sometime perceive a three-dimensional figure as two-dimensional. Another example is unconsciously talking about something else, which is similar to what has been asked about.

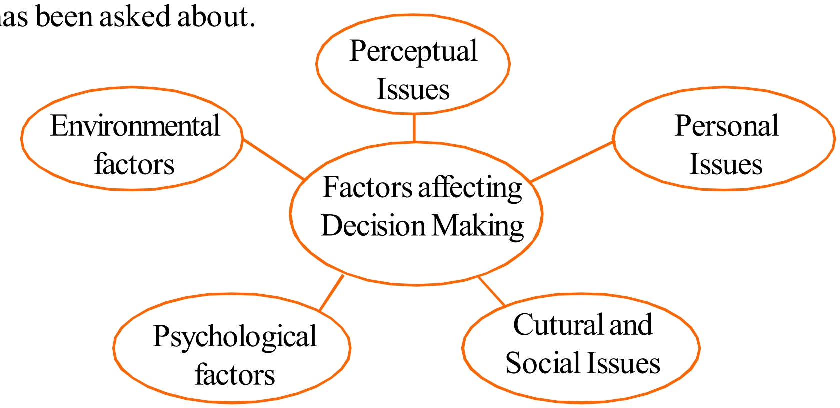


Figure 11.4: Factors affecting Decision Making

INTEXT QUESTIONS 11.3

State which of the following statements are 'true' and which are 'false'?

1. Representativeness and Availability are types of Heuristics.
2. Cultural and social issues do not affect the decision-making ability of a person.
3. Anchoring and Adjustment are one of the stages of decision-making.

11.5 CREATIVE THINKING

Creative thinking involves a considerable amount of unconscious rearrangement of symbols. It involves the production of new and original ideas, solutions or objects. It's different from other kind of thinking, ideas over here are new and original both. Generally, uniqueness of solutions, which have not been used earlier constitute the arena of creativeness.

The thinker here at first makes a little progress, but then perhaps triggered by a fortuitous set of circumstances, a new idea seems to "bubble up" into awareness, or consciousness, in a seemingly spontaneous manner. This sudden appearance of new ideas is called insight.

It is important to understand that the new and original idea should also be appropriate in a particular context. The workability and functionality decide the importance of the idea. Hence any thinking which is constructive, appropriate, reality- oriented, novel and desirable comes under the header of creativity.

J.P. Guilford was a pioneer in the field of creative thinking. He proposed two major types of thinking-

Convergent: Here mind converges to solve a problem, which has only one possible solution. The result of convergent thinking is usually a solution that has been previously arrived at by someone else. Like: 2-1= 1

Divergent: This is involve in open-ended questions, where there is no set answer to a particular problem. Such thinking where the pattern is not set and number of solutions could be attained, leads to generally creativity and novelty of ideas. Divergent thinking includes autistic and convergent thinking to gather information as building materials for the ultimate creative solution. At times, the person may drift into autistic thinking, or free association in which the symbols of thought have private meanings.

Divergent thinking abilities generally include - Fluency, Flexibility, Originality and Elaboration.

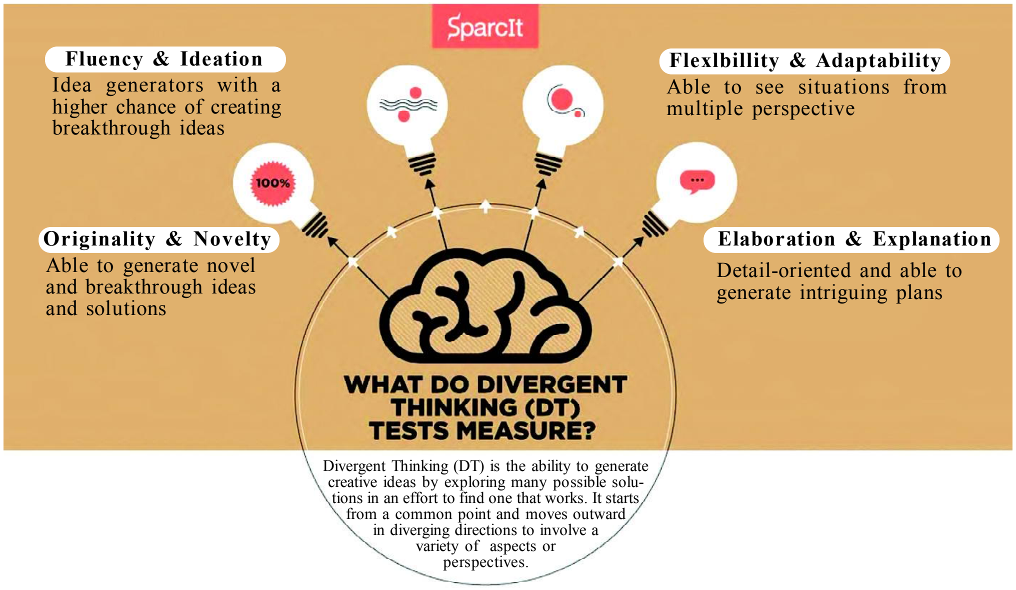


Figure 11.5: Aspects of divergent Thinking

Source: https://medium.com/sparcit-blog/divergent-thinking

11.5.1 Process of Creative Thinking

There are different stages, which comes before creative thinking. It begins with

- **Preparation:** The thinker formulates the problem and collects the facts and materials considered necessary for the new solution.
- **Incubation:** During this period, some of the ideas that were interfering with the solution tend to fade. The unconscious thought processes involved in creative thinking are also at work during this period.
- **Illumination:** Here comes 'Aha' effect. In this, an idea for the solution suddenly wells up into consciousness. The person has feeling of excitement and satisfaction.
- **Evaluation:** The apparent solution is tested to see if it unsatisfactory, and if it is then the thinker is back at the beginning of the creative process. The solutions are tested and judged.
- **Revision :** Frequently, the insight turns out to be unsatisfactory and the thinker is back at the beginning of the creative process. In other cases, the insight is generally satisfactory but needs some modification or the solution of minor problems to be a "good" new idea.

  It is important to understand that both heredity and environmental factors plays a role in development of creative thinking abilities. Practice, training and stimulated environment makes a person more imaginative, flexible and original in solving problems.

11.5.2 Barriers to Creative Thinking

Inhibiting factors which reduces our creative expression are -

- **Habitual** (in a habit of thinking in a particular way).
- **Perceptual** (perceiving a problem in a manner in which it is always done).
- **Motivational and Emotional** (Lack of motivation, fear of failure, fear of rejection, fear of judgment, fear of being different).
- **Cultural Barriers** (Adherence to traditional expectations, stereotypes, conformity bias, dependency on others, group pressure). It is important to remove the above-discussed barriers to become a creative thinker.

11.5.3 Characteristics of Creative Thinkers

- **Preference to complex task -** Such people like higher degree of complexity and imbalance in their task.
- **Independence in judgments -** Self-dependency is important to them hence; they make judgments independently without being influenced by others.
- **Higher awareness and sensitivity** - Creative thinkers are vigilant about their surroundings and people. They always strive to know more.
- **Notices contradictions and incompleteness -** They analyze situations in both holistic manner and by breaking it into parts. That is why it becomes easy for them to pin point incompleteness.
- **Pondering over mysteries of situations and objects -** Finding new ways and trying to solve the mystery around is important to them.
- **Developing the art of asking questions-** Questioning others and oneself is the skill these people rely on.
- **Generating diverse ideas and solutions -** Divergent thinking is a forte for creative thinkers.
- **Brainstorming -** These people try to find as many as possible solutions to a problem.
- **Getting feedback on the solutions -** Once applied they follow up the consequences of the solution and take feedback so that better performance can be done in future.
- **Resistance to temptation of immediate reward and success coping with frustration and failure-** Creative thinkers are masters in delay of gratification, they wait for the right time and enjoys success then.
- **Visualizing causes and consequences and predicting things -** They not only understand the start and end to a problem and solution but try to know the mediating factors too.
- **Awareness of own defenses-** Self-Introspection is what they depend on. Knowing one's weaknesses and strengths leads them towards better solutions.

- **Self-positivity and confidence -** Positive self-talk is an important characteristic of creative thinkers.
- **Self- assertiveness and dominance -** Being assertive about their decisions and judgments is visible in their personality.
- **Rejection of suppression -** Suppression of thought people and situation is not acceptable by creative thinkers.

ACTIVITY

Examine how many characteristics of a creative thinker, you possess.

INTEXT QUESTIONS 11.4

1. Barriers to creative thinking:

   (a) Perceptual

   (b) Cultural

   (c) Habitual

   (d) All of the Above

2. The first stage of creative thinking is:

   (a) Incubation

   (b) Preparation

   (c) Revision

   (d) None of the Above

11.6 LANGUAGE AND THOUGHT

Thinking is not only based on concepts and images; our words and language are also essential in our thinking process. Let us discuss language and its relationship with thought.

Development of Language

Language is one's ability to use diverse set of symbols and rules for combining them for communicating information.

Table 11.1: Conceptualization of language

Concept of language involves			
Sounds or written elements of language	Knowledge of rules for combining words	Storage of semantic /meanings of various words	Using speech in order to have intended impact on others

Development of human language is complex, spontaneous and creative. Acquisition of language in children generally follow a predictable pattern, which moves from crying to cooing then babbling, Echolalia (strings of sounds combined into repetitive patterns), one word, Holophrases (one or more words which combined to form whole sentences or phrases), then telegraphic speech and then at last language with correct rules and impact.

STAGES OF FIRST LANGUAGE DEVELOPMENT

Age	Accoomplishment	Examples
0-2 months	Crying (express hunger and discomfort)	
2-4 months	Cooing (express satisfaction of pleasure)	aaa,ooo
4-9 months	Babbling, gurgling, changing to echolatic babbling	gagaga, mamamama
9-18 months	One-word utterances; refer to people and objects in baby's life	juice; mama
18 months 2 ½ years	Two-word utterances; the beginning of syntax, expanding to three-word utterances; allows for more communicative functions (commenting, negating, requesting & questioning)	more juice juice fall down Daddy go?
2 ½ years 4 years	Telegraphic Stage (S.V.O): Expanded syntax and vocabulary; omit key grammatical markers and function words	I eated bread

Figure 11.6: Stages of Language Development

Source: http://thelimitsofmylanguagemeansthelimitsofmyw.weebly.com/first-and-second-language-development.html

Notes

11.6.1 Language as determinant of thought

When we talk to people living in snow covered areas they have more than 6 types to connote to snow whereas we only have 2 or 3. Similarly, an Indian has various terms for kinship relationship in comparison to English speaking who connote these only with uncle or aunt.

Does it bring us to the conclusion that our thinking process depends on how we describe it in our language. Benjamin Lee Whorf was of the view that language determines the contents of thought. This view is known as Linguistic Relativity Hypothesis. In its stronger version, this hypothesis states that what and how individual think is only determined by the linguistic categories they use. This is known as Linguistic Determinism.

This view does have certain experimental evidences showing that some thoughts may be easier in one language compared to other but there are other evidences portraying same level or quality of thoughts in all languages.

11.6.2 Thought as determinant of language

Swiss psychologist, Jean Piaget believed that thought not only determines language but also precedes it. He strongly believed that children form an internal representation of the world through thinking. Whenever they encounter a particular situation of learning, thinking is involved irrespective of whether they have access to language or not. Language for him is only a vehicle of thinking. It can affect children's range of symbolic thinking but it is not necessary for the origin of thoughts. Piaget propagated that understanding of language symbols and rules itself require thinking and formulation of concept of words. Thus, thought is basic and necessary if language is to be understood and learned.

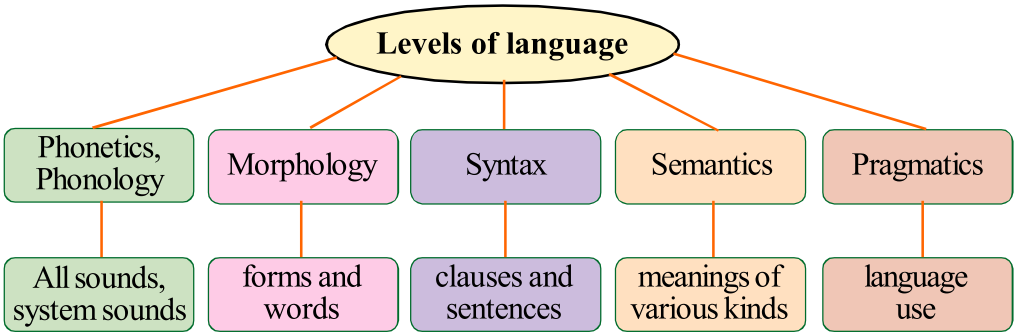


Figure 11.7: Levels of Language Development

Source: https://www.hierarchystructure.com/emergence-hierarchical-structure-human-language/

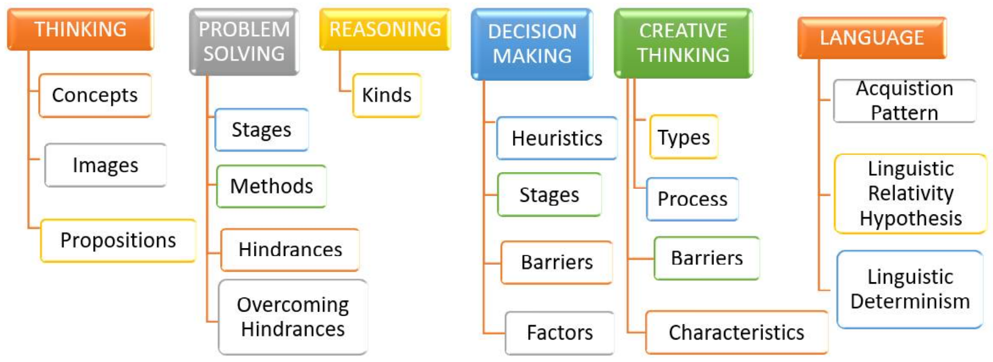
Notes

The Russian Psychologist, **Lev Vyogotsky** argued that both language and thought develop separately until 2 years of age and later they merge. Before 2 years, thoughts are experienced more in actions. Around 2 years of age, child expresses thought verbally and their speech reflects rationality. Now, children manipulate thoughts using soundless speech. According to Vyogotsky, this is the time when development of language and thinking become interdependent. Thought works without language when we are involved in any visual or motor task. Even language can be used without thinking when there is only expression of feelings. When both work together, verbal thought and rational speech occurs.

Learning of language is a complex task, which involves both inherited characteristics and environmental stimulation. Different psychologists attach different reasons for learning of language.

Noam Chomsky, a known linguist proposed the idea of innate proposition of development of language. He conceptualized that children have a 'critical period ' where learning must occur if it is to occur successfully. He believed that there is built in readiness to learn language in children. This explains why children sometimes acquire language even without direct teaching. Behaviorists on the other hand believed it to be developed by imitation and reinforcement. It could be concluded that language and thought are interdependent, depending on the situation and circumstances, one leads another.

WHAT YOU HAVE LEARNT



TERMINAL QUESTIONS

1. Discuss the nature of Thinking.
2. What do you understand by concept? Discuss propositions.
3. Highlight different stages of problem solving. Discuss barriers in effective problem solving.
4. What are the different kinds of reasoning?
5. Discuss types of heuristics with examples.
6. What do you understand by creative thinking? Highlight different characteristics of creative thinker
7. Explain Linguistic Relativity Hypothesis.
8. Examine relation between language and thought.
9. Discuss the stages of development of language.
10. Describe process of creative thinking.

ANSWERS TO INTEXT QUESTIONS

11.1

1. Autistic
2. Propositions
3. Natural

11.2

i. d

ii. c

iii. a

iv. b

11.3

1. True
2. False
3. False

11.4

1. d
2. b

MODULE -3

Human Development

The module aims at building an understanding of human development across the lifespan and deals with key features and challenges across different stages of development. This will help the learners reflect on their own course of development and related experiences.

12. Life Span Perspective on Development

13. Infancy and Childhood

14. Adolescence and Young Adulthood

15. Adulthood and Old Age

12

LIFE SPAN PERSPECTIVE ON DEVELOPMENT

Anita is 35 years old. One day she was looking at her childhood photographs and alongside talking to her 60-year-old mother. Her mother told her how soon she started recognising her mother; started walking on her own; uttered her first words; started going to school; first few years of education. These issues of growth and development come into the lives of all. These were nostalgic for Anita. She told her mother about her growing up years; her friends; her career choices. She also spoke about how different her life is now from those days. Her day is now occupied raising her three-year-old daughter, an infant and taking care of aging members of her family. Her life concerns seem to be changing all through her life.

Anita further wondered how her newborn infant is growing and will soon change so much to become a child with a seemingly different set of abilities? It further intrigued her how children are different from adult and how they attain adult-like capacities in due course of time? These are questions that can be answered by understanding growth and development. It has been observed that children in a similar age group go through similar changes and this makes some predictable patterns in the growth and development. These patterns are affected by several factors both maturational and contextual. In addition to that, our human abilities and milestones in each of the age ranges keep evolving over our entire lifespan. In this lesson let us study what is meant by growth and development and what are the principles guiding them. Let us also study in detail about the factors that affect growth and development.

Notes

LEARNING OUTCOMES

After studying this lesson, learner :

- explains the principles of development; and
- relates to the factors that influence development across different stages of life.

12.1 GROWTH AND DEVELOPMENT

We often use the words growth and development rather interchangeably. But do these two mean the same or are they different? Let us read about growth and development in the following sections.

12.1.1 What is Growth?

Growth refers to quantitative changes in the body. We can identify whether growth is taking place in a child or not by the increase in the child's height and weight. In addition to those indicators of growth also include changes in body structure and body proportions. Although changes in all domains of development take place but any changes in the physical development of the child becomes most apparent to the human eye. Growth continues to take place over time. Even when people stop to grow in height, the structure and proportion of the body keeps changing during entire life span.

One of the significant features of growth is that these changes are measurable. It is important to note that growth is not uniform across life periods and all parts of the body do not grow at the same rate. Rapid physical growth takes place in the first two years of life. The weight of newborn child can range from 2.4 kg to 3.2 kg. On an average, increment in weight is 2.0-2.5 kg per year. In fact, between birth and first birthday, well-nourished children can undergo a 50 percent increase in height. During the first and second year, the height of infants increases approximately by 40 percent and 60-75 percent respectively for boys and girls. Boys are ordinarily heavier and taller than girls during infancy as well as during toddlerhood. In middle childhood, one may experience periods of plateau growth where growth is stable. Later, during adolescence, again one experiences a period of growth spurt where growth in height and weight are rapid. Height and weight charts are available to assess health and physical development in children. These charts should be especially maintained for those who fall ill frequently. This helps to monitor their growth and provide timely inputs.

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You must have observed that body proportions of children also undergo changes over a period of time. Head of a newborn looks bigger as compared to the rest of the body. The top of head appears to be large and the facial area remains small. Later owing to the changes in the body proportions, the head does not look that big. Throughout infancy and toddlerhood, the lower portion continues to remain underdeveloped and smaller. The size of head increases in size and accounts for one-fourth of a child's length by the age of 3 years. However, functional development of brain continues into adolescence. Likewise, at birth newborns arms appear to be longer in proportion to their legs.

12.1.2 What is Development?

Development refers to qualitative changes in the body as well as changes in behaviour and attitude. It is difficult to measure development as these changes are qualitative in nature. Physical growth is measurable quantitatively; however, certain changes such as cognitive and socio-emotional may not be easily measurable. These can only be measured qualitatively by the quality of changes that occur in different domains of development. Development is a rather broader term that entails overall changes in the body and mind. It is continuous process that continues throughout the entire life span of an individual. It is said to be more complex than growth. It is understood by the change in quality of relationships, emotions, reasoning and so forth.

INTEXT QUESTIONS 12.1

Put the following words into the most appropriate columns based on whether they are associated with growth or development-

- Quantitative
- Qualitative
- Growing tall
- Becoming heavier in weight
- Change in body proportions
- Maturity
- Management of emotions

Notes

- Continues throughout lifespan
- Disappearance of baby teeth

Growth	Development

Match the following

1.	Quantitative	a.	Lifespan
2.	Qualitative	b.	Growth
3.	Height and weight charts	c.	Assessment of health
4.	Continuous development	d.	Development

12.2 PRINCIPLES OF DEVELOPMENT

In the previous section, you have already read about growth and development. In this section let us study what are the general principles that govern development.

12.2.1 Development is continuous

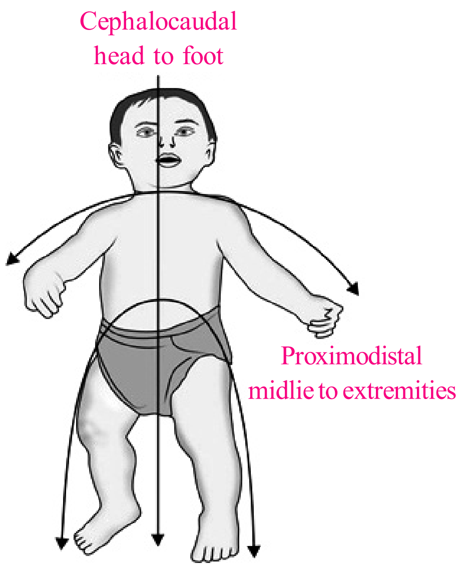
Development happens continuously and gradually over a period of time. From the moment of conception till death the individual is continuously changing. You must have observed that as children are born, they begin to slowly change in different dimensions of development. Development is not sudden; rather there are intermediate steps that lead one to fully attained capacities. In terms of language development, children begin by making cooing sounds and thereafter start to babble. Soon after, they start using one word to communicate what they want. By the beginning of the second year they start using two word combinations to state what they want to say. Their language development continues from here to making full sentences by the mid of second year. The complexity of language continues as children grow up until they attain complete mastery over human language. These changes that take place over time may not be noticeable on a day-to-day basis but they are taking place gradually and do not stop over time

12.2.2 Development is sequential and follows a pattern

Development of all human beings follows a universal or similar pattern and direction. All children follow these developmental patterns. This sequential pattern can be seen in two directions

i. Cephalo-caudal sequence: This means that development takes place from head to toe i.e. an individual child begins to grow from the head region to the toe. This is why their heads develop first, followed by trunk and legs.

ii. Proximodistal sequence: This means that development proceeds from the central part of the body to peripheries or outer parts of the body. This can be observed in the fact that children first attain control over their arms and later on their hands. Likewise children's first teeth erupt towards the centre of their bodies and later the teeth towards the sides of the mouth appear.



There are predictable patterns in all domains of development. In the text above one may read about these patterns in development of language. In cognitive development too one may see that initially children's thinking is bound to concrete objects in their environment but later they can think in terms of abstract ideas as well.

12.2.3 Development proceeds from general to specific

In all phases of development, changes proceed from general to specific. To understand

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this better, consider this example. When a rattle is shown to a young child, the child first moves his/her entire arm in appreciation and excitement. The child moves the entire arm with little precision in order to catch hold of the rattle. This is a more general ability to move the entire arm. It is slowly that the child masters the specific ability to co-ordinate his/her eye-hand movements and grab the rattle with the fingers of his/her tiny hands. Thus, grabbing is more specific motor ability.

12.2.4 Development is predictable

One may predict the pattern and rates of development for periods of growth and development in children. It is easily predictable what milestones in different stages of development can be expected from children of different ages. Likewise, the steps in development may also be predicted. For instance, children in the age range of 9 months to 15 months may be expected to start walking on their own without any support from others. In addition to this, there is predictability in the pattern wherein children first gain control over their necks, start sitting with support, start crawling, stand with support and eventually walk without support. These patterns are also observable in other domains of development. For example, children understand and display basic emotions during the first two years of life and by the end of two and half year begins to understand self-conscious emotions as well. Their emotional competencies develop further over childhood and adolescence. Maturity to fully understand and manage emotions continues to develop until adulthood; ending with wisdom in old age. Thus, attainment of emotional understanding is also predictable, just like development in other domains.

12.2.5 Development occurs at different rates

It is notable to mention here that development occurs at different rates for different domains. For instance, physical development is rapid during the first few years of life until it slows down and again picks up pace during adolescence. Development during other domains may not follow the same trajectory. For instance, there is critical period for development of language. Children who are exposed to language inputs when they are under the age of six acquire language better than those who are not given enough opportunity to learn language at this age. There may be other times when development in other domains may happen rapidly. In addition to that, different parts of the body may not develop at the same time. For instance, children gain height to attain adult-like height by the end of adolescence and later do not gain height. However, they may continue to add weight and muscle mass.

12.2.6 There are individual differences in development

There are certain expected patterns of development for a particular age range, which are called milestones of development. These milestones are usually achieved by most of the children in a particular age range. For instance, if one expects children to start communicating their wants and needs by the age of 3, then one must expect that within a normal age range all children will be able to do this. But no two individuals are alike and each child is unique. One child may start walking early and the other may start walking later than most of her/his counterparts. Therefore, one must keep in mind that although sequence of development is uniform and predetermined but the rate of development may differ for different individuals. The level of competence attained by each individual may also differ. Some children excel in language development but lag in physical competencies. On the other hand there may be children who may not do very well in cognitive attainments but are physically very sturdy and athletic.

12.2.7 All aspects of development are interrelated

All domains of development are related to each of the other domains and a child develops as a unified whole. Each domain of development affects the other and is, in turn, affected by the other. Any lag in one domain is likely to affect other domains. For instance, if a child lags in communication and language development then the child may not understand how to maintain healthy social relationships with her/his peers. This may impact the interaction that the child will have with other children. They may not involve this child in their play. This will further impede the child's cognitive, emotional and physical abilities. This impact may vary sometimes serious and permanent and sometimes minor and temporary.

INTEXT QUESTIONS 12.2

State whether the following statements are true or false

a. Domains of development are not related.

b. Development follows a predictable pattern.

c. All children are alike and by a certain age all must attain same abilities.

d. Physical development during early years of life and puberty is rapid as compared to other stages of life.

Notes

12.3 FACTORS AFFECTING GROWTH AND DEVELOPMENT

You have already studied about growth and development and what are the principles of development. Let us now study about the factors that affect growth and development. Read the case studies given below and answer the questions that follow

Case Study: Anu and Mani are friends. Anu understands that sometimes Mani gets angry on seemingly everyday issues but Mani does not herself recognize her emotional outburst; neither can she deliberately control her anger pangs.

What can you say about the ability of the two friends in understanding emotions?

....

....

....

....

....

What can be the probable causes of these differences in the two friends' competencies in management of emotions? Was Anu born with an inherent capability to understand and manage emotions well or did she pick this up from her environment?

....

....

....

....

....

The case given above builds upon the fact that development is a product of both heredity as well as environmental factors. Some psychologists believe that heredity impacts our development more than the environmental factors and vice-a-versa. There is no clear cut answer to this nature versus nurture controversy. Our genetic make-up and the inputs we get from the environment, both impact us and make us what we are. Let us explore these factors in greater depth in the section that follows.

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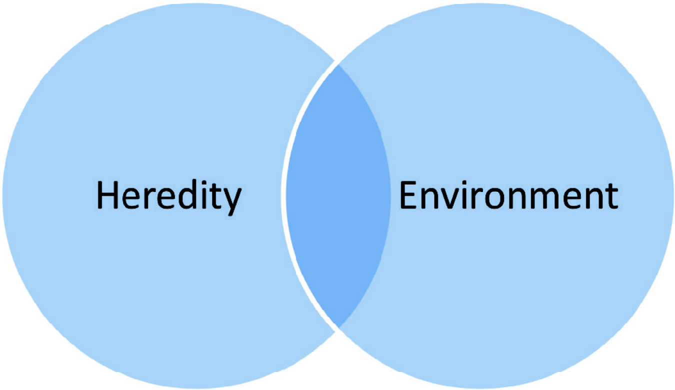


12.3.1 Influences of Heredity on Development of Individuals

Are you like your parents or grandparents in many ways? Do your facial features look like any of them? Have you inherited your parents' height, whether they are tall or short? Have you ever heard your parents telling you that they seem to be having similar medical problems such as asthma, heart ailments and so forth, as their parents had at their old ages? Is there continuity between generations from a similar family tree? How does this happen?

One may inherent characteristics from both their parents. This happens as the child receives genes (which are structural units of chromosomes) from both the parents at the time of conception. Scientists believe that nothing can be added or subtracted from this genetic endowment. This genetic inheritance affects all aspect of our growth and development. Genes are found to influence an individual's height, weight, colour and quality of our skin and hair, even the susceptibility to diseases and medical conditions that one may have at different ages especially during old age. This genetic endowment seems to be tied to maturation of the body and the brain which influences growth and development.

In addition to these aspects, the sex of the baby is also determined at the time of conception. Every individual receives 46 chromosomes-23 each from the father and the mother. The sex chromosomes passed on by the father determine the sex of the child. The sex of the child gives rise to many variations that are related to sex differences. In the earlier section of the lesson it was mentioned that boys are generally taller and heavier than girls. The age for beginning of pubertal changes is also slightly different for boys and girls. While girls begin to attain height and other puberty related changes earlier than boys; boys continue to gain height and muscle mass much later than girls. These differences may be attributed to inheritance of specie-specific patterns of growth and development.

This is not to say that growth and development is driven only by hereditary make-up of individuals. In fact, genetic predispositions can be overridden by environmental influences. Let us read how environmental or contextual factors affect development.

12.3.2 Influences of Environmental factors on Development of Individuals

We all may have observed that a child's immediate environment of the family and home affects the child after she/he is born. But do you know that even before the child is born the child gets affected by the environment around her/him. This environment is however not external but the environment within her/his mother's womb. Let us read how the environment in which the child grows before birth affects her/his development.

- **Pre-natal Environment**

  Many environmental factors such as nutrition taken by the mother, her general state of physical and mental health, her age, and exposure of the unborn baby to environmental pollution, x-rays and drugs taken by the mother during pregnancy affect the child.

  If a pregnant mother keeps good health and eats nutritious and balanced food, this affects the child in the long run. Not just the baby born is healthy but also in later life, the child is likely to keep good health. On the other hand, if the mother is poorly fed, this may impact the unborn child negatively. The in-vitro growth will be restricted; the chances of the newborn child being underweight and with reduced motor and cognitive capacities become high. Mother needs to remain physically healthy and active during pregnancy. This protects the child's physical well-being in the womb. Apart from general physical state of the mother, the mother should remain happy. When pregnant mothers are upset and experience emotions like unhappiness, rage, fear and anxiety, this affects the mental states of the child as well. Such mothers are more likely to deliver premature, low birth weight, hyperactive or irritable babies.

- **Maternal health and age during pregnancy**

  Besides nutrition and physical-mental states of the mother, if mother contracts any disease during pregnancy, that adversely affects the unborn child. Maternal age is also likely to impact the foetus. Reproductive organs of mothers who are less than seventeen years of age are not fully mature and the hormones required for reproduction are not at the optimum level. Likewise, after the age of 35, hormonal activity gradually decreases which may lead to complications in the

foetus. Women over 40 run the risk of delivering children with chromosomal abnormalities.

- **Potentially harmful environmental factors during pregnancy**

  Environmental pollution such as absorption of lead from car exhausts, inhaling paint from flaking walls and factories affect prenatal development negatively. Continued exposure to these may lead to prematurity, low birth weight and brain damage in the foetus. These may also lead to physical defects in the unborn child. Along with these, pregnant mothers should also avoid unnecessary exposure to x-rays as these too may affect the physical and mental development of the foetus. In addition to these, there are some antibiotics, anticoagulants, narcotics, tranquilizers that may harm the unborn child. These drugs should not be taken without doctor's prescription. Along with these, drinking alcohol and smoking may lead to mental retardation, physical deformities, sleep disturbances and congenital heart diseases in children if consumed. These also increase the chances of lower birth weight in the newborn and premature birth. In fact caffeine and tannin consumed through tea and coffee if not taken in moderation may also lead to negative effects on the foetus.

  There are some other contextual factors that affect the child after birth. These include socio-economic status of the child's family, their living conditions, family structure, child rearing practices and the society at large.

- **Socio-economic background**

  Socio-economic background of a child's family impacts the child in both the short and the long run. Socio-economic background of the family is an indicator of different economic resources and the living standards of the family vis-à-vis the child. A child in a lower socio-economic status family as compared to those from middle or higher socio-economic families, is more likely to have poor nutrition, unhygienic living conditions, delayed medical treatment, compromised educational and overall stimulation at home. All these affect a child's growth in most of the domains of development. As already stated above, all domains of development are interrelated, so poor nutrition not just impacts the physical well-being but also impairs the cognitive, language and socio-emotional development negatively.

- **Family Structure**

  Urbanization and migration have brought about changes in the structure of family.

There is an increasing number of families in the contemporary times which are nuclear in nature. The kind of social environment provided to the children as they grew up in joint family set ups is absent in the nuclear family set ups. This social environment not only includes distribution of family resources among more members but also the set of traditions, values and culture. Furthermore, since more and more women are joining the workforce outside home, this has also changed the role of family members in the life of growing children.

- **Child-rearing practices**

You may have observed that different parents interact and deal with their children differently. Some parents are very authoritarian and make strict rules and regulations that the children must follow. On the other hand, some parents may be overly permissive, letting children do whatever they wish to do without any monitoring or control exercised by the parents. These are two different types of parenting styles. In this continuum there may also be parents who let the children make decisions for themselves but talk to their children about the pros and cons of every situation and help them arrive at their choices but after a dialogue with them. This gives their children a sense of autonomy and responsibility for what they choose to do. These parenting practices may have positive or negative impact on the child's development. Balanced attitude of the parents and other family members towards children creates an environment where children learn to become confident, have high self-esteem and find people around them trustworthy. This is not just important for social and emotional development but also for all the related domains of development. On the other hand, if children grow up in unfavorable environment, this is going to affect their personal and social adjustment negatively. They may show a lag in all other domains of development as well.

- **Siblings and Peer group members**

Apart from parents, children's growth and development also get strongly influenced by their siblings and peers. Siblings at home become playmates and interaction with them provides context to learn so many lessons. All these contribute in the cognitive, language, socio-emotional, moral and physical development. Children learn to distribute things among themselves; they learn to share and fight for things; they also learn to look after and support each other and so forth. Furthermore, at times siblings also develop rivalry with each other, this too affects children.

Notes

Beyond the confines of the home and one's immediate family, how well a child is accepted within the peer group deeply influences her/his development, especially self-concept. Children learn to behave appropriately with their peer group. Friends provide sources of emotional support for each other. In company of friends as well children learn to share, cooperate, become autonomous, practice skills of leadership and competition. Hence, the role of peer group as one of the factors that influence development cannot be undermined.

There are other contextual factors such as gender, media that too affect development in different domains.

INTEXT QUESTIONS 12.3

Multiple choice: Select the best answer for each question

1. The primary cause of developmental change is
   a. Maturation
   b. Learning
   c. Experience
   d. The product of both maturation and experience
2. Pre-natal development is not affected by
   a. Mother's nutrition
   b. Environmental pollution
   c. Peer relations
   d. Mother's emotional state

ACTIVITY

Talk to a grandparent and a parent each who grew up in joint/nuclear family set up about their experiences of growing up. In particular discuss their interaction with their parents and other members of the family. Ask them to reflect and share how their patterns of interaction influenced their ways of behaviour, personalities (including temperament) and sense of being (including aspirations, ways of dealing with stress etc).

12.4 LIFESPAN DEVELOPMENT

You must have heard from people sharing about their concerns based on the stage of life they currently inhabit. This is indicative of the fact that human lifespan can be divided into stages. Human lifespan can be followed in a chronological format that begins from birth (or even conception) and is recognized till adulthood and old age.

Most Psychology and Child Development texts divide human lifespan into the following stages-

Table: Stages of Human Lifespan

Stages of Human Development	
Conception to birth	Prenatal
0-2 years	Infancy
2-3 years	Toddlerhood
3-6 years	Early Childhood
6-8 years	Middle Childhood
8-11 years	Late Childhood
11-18 years	Adolescence
18-40 years	Early Adulthood
40-65 years	Adulthood
65+ years	Old Age

As you can see in the table, from conception till birth, the foetus grows in the womb of the mother. This period is called the prenatal stage. After birth, from 0-2 years children are in the stage of infancy. From 2-3 years they are considered to be in toddlerhood. From 3-6 years of age children inhabit the stage of early childhood and from 6-8 and 8-11 years they are considered to be in middle and late childhood respectively. Adolescence begins by the age of 12 in most societies and continues till the age of 18 years. Early Adulthood emerges at the age of 18 years and continues until the age of 40. From 40 to 65 years of age people continue to be in adulthood; following which they enter the stage of old age. It is important to note that as modern life styles are

changing, people do not strictly fit into the age brackets mentioned above. These age ranges are rather fluid. One may see children entering into the stage of adolescence rather early and delay responsibilities of adulthood.

Until recently it was widely believed that development stops at adolescence, but now we know that even very old people continue to grow and develop. The lifespan development perspective proposes that people continue to change throughout life as well as stay the same, from conception to death. This means that there is an internal sense of continuity within each individual where their earlier life stages impact their later life stages. In consonance to that, they adapt to each new situation and concerns of the new stages that they inhabit. Baltes have identified the following key principles for understanding the lifespan approach. These are as under-

Notes

i. **Development is lifelong:** As life keeps changing, one encounters new situations each day. This requires a person to adapt and change as per the demands of the new situations. For example, changing a new school, a new job and so forth. All such changes require a person to change. But there is continuity in the manner we change. Each period of lifespan is affected by what happened before and will affect what is to come.

ii. **Development is multidirectional and involves both gain and loss:** Development proceeds in more than one direction. As people gain in one, they may loose in another. Children grow up in one direction i.e., they grow up in size and abilities. However, as adolescents typically gain in physical abilities, they lose their ability to learn language. Although vocabulary continues to increase throughout adulthood; other abilities such as ability to solve unfamiliar problems may diminish.

iii. **Relative influences of biology and culture shift over the lifespan:** As we have already read in the text above, development is influenced by both biology and culture, the balance between them changes over time. Biological influences such as muscular growth, strength and coordination becomes weaker as the person gets old, but cultural supports such as education, relationships, technological support from the environment helps to compensate.

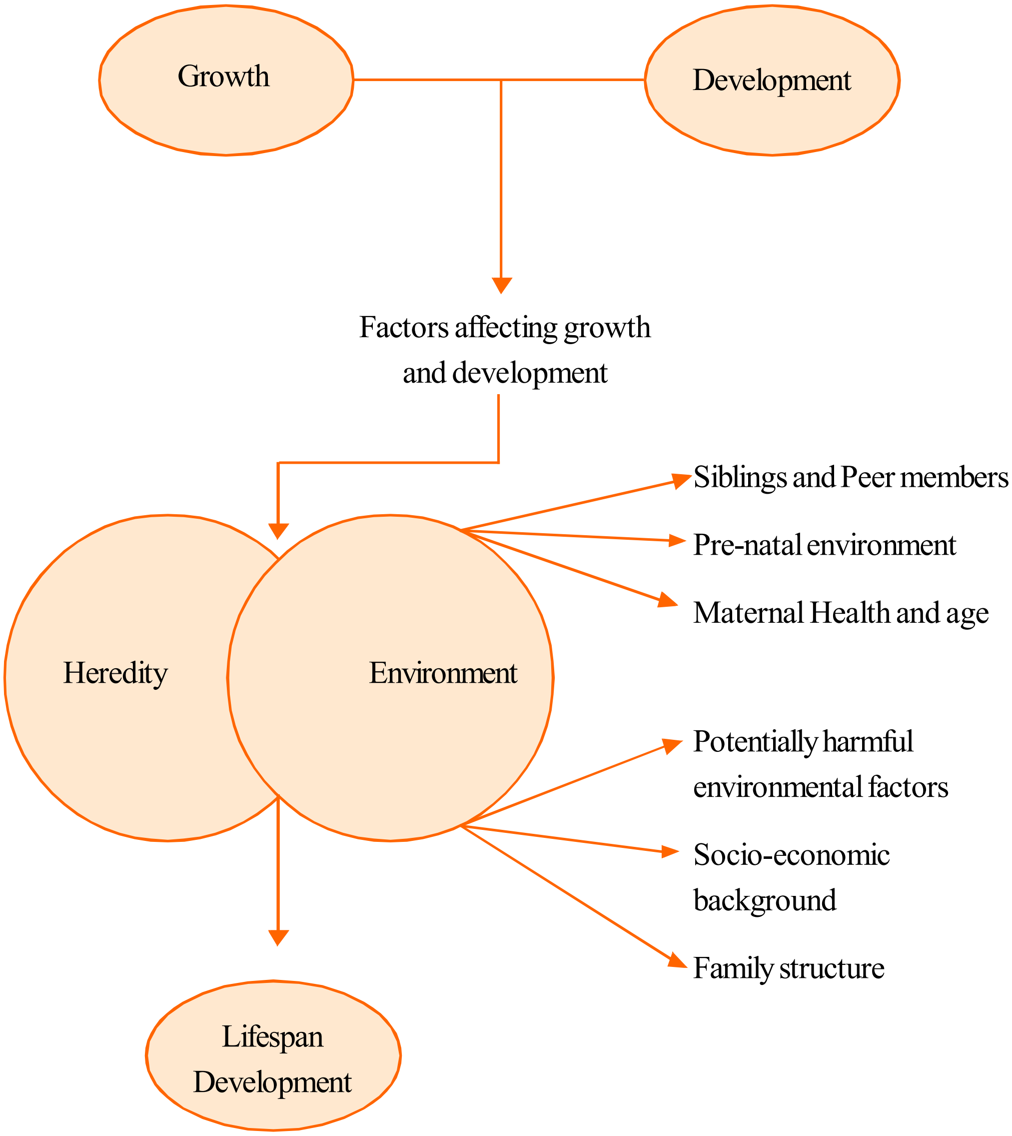
iv. **Development is characterized by plasticity:** Throughout life, development shows modifiability. This is all about our ability to change. Many abilities such as memory, strength, endurance keeps changing over the lifespan and we also have the ability to recover physically and mentally from injuries and accidents.

v. **Development is influenced by the historical and cultural context:** Each

Notes

person develops within multiple contexts including circumstances or conditions defined in part by biology, in part by place and time. In addition, to that age graded (specific age group an individual is in such as toddlerhood, adolescence) and non-normative life influences such as those experiences that are unique to each human being also influence our development.

WHAT YOU HAVE LEARNT



TERMINAL QUESTIONS

1. State the differences between growth and development.
2. Elaborate different principles of development with examples from each of the domains.
3. Each child's development is different and this makes each child unique. Do you agree or disagree with this statement? Support your answer with suitable examples.
4. Make a web of factors that influence development. Discuss two hereditary and environmental factors each that affect development.
5. Explain lifespan development taking examples from your own life changes.
6. What are some of the changes that take place in child's physical development and growth, and how can they be measured?
7. What is the difference between growth and development, and how is development measured?
8. What are the general principles of development and how does the process of development occur in a sequential and patterned manner, following a cephalo-caudal and proximodistal sequence?
9. How does lag in one domain of development affect other domains and child's overall development?
10. What are the key principles of the lifespan development perspective proposed by Baltes?

ANSWERS TO INTEXT QUESTIONS

12.1

Growth and Development

Growth	Development
Quantitative	Qualitative

Growing tall	Maturity
Change in body proportions	Continues throughout lifespan
Becoming heavier in weight	Management of emotions
Disappearance of baby teeth	

Match the Following

Answers

1-b

2-d

3-c

4-a

12.2

Principles of Development

(a) False

(b) True

(c) False

(d) True

12.3

Multiple choice

1. d
2. c

13

INFANCY AND CHILDHOOD

Meena is now 7 years old. She often hears stories of her childhood from her parents and grandparents. She does not remember much from her infancy days on her own. But she seems to have picked up a sense of what all she could do from the photographs and narrative accounts shared by her parents with her. She tells that she started walking by her first birthday and recognized almost all her extended family members as well by that time. She also tells how happy she used to feel when her mother used to return from office and her father used to bring her balloons and chocolates every evening. She remembers her first days to her play-school as well.

Think of the time when you were a young child. You must have also heard about your growing up from your parents and others. Some of the significant events you must be remembering on your own as well. Are you able to recall what all you used to do during your childhood days? What abilities did you have as you grew up from infancy through childhood? What were your developmental milestones and concerns related to infancy and childhood? In most developmental psychology texts, childhood is divided into the following stages of development-

- Infancy: Birth to 2 years of age
- Early childhood: 3-5 years of age
- Middle and late childhood: 6-11 years of age.

In this chapter let us study about physical, cognitive and socio-emotional development during these stages of life.

Notes

LEARNING OUTCOMES

After studying this lesson, learner :

- describe the stages of physical, cognitive and socio-emotional development during infancy to childhood; and
- reflect on the issues and problems encountered in infancy and childhood stage.

13.1 PHYSICAL DEVELOPMENT

Physical development includes changes in height, weight and body proportions. Physical development is understood better in terms of motor achievements of children. There are two types of motor skills-gross motor and fine motor skills. Gross motor skills require large muscle movements and fine motor skills involve small muscle movements. Let us study about these in detail in the following sections.

13.1.1 Physical Development during Infancy

An average newborn is 49-50 cm long and weighs 2.5 kg. Newborns in the first few days lose 5 to 7 percent of their body weight. This is because infants are learning to adjust to suckling, swallowing and digesting. There is rapid weight gain once they have mastered this. By the age of 4 months, infants have ordinarily doubled their birth weight and have nearly tripled it by their first birthday. In the second year of life, infants weigh approximately 10 kg; and have now reached about one fifth of their adult weight.

In terms of length, infants grow approximately 1 inch per month during the first year, reaching approximately one and a half times their birth length by their first birthday. By the age 2 years an average infant becomes 71.3cm tall, which is nearly one-half of adult height.

Early motor skills are based on infant reflexes i.e. they are often automatic responses to the environmental stimuli. For example, infants grasp anything that touches their palm (which is called grasping reflex) and turns head, opens mouth and begins to suck when their cheeks are stroked or side of mouth is touched (which is called rooting reflex). Some of these reflexes such as grasping reflex eventually become incorporated into more complex voluntary actions.

Newborns cannot control their body postures voluntarily. But within weeks they begin to hold their heads erect and soon they can lift their heads while prone. By age 2

months, infants start sitting while supported on lap. But until 6 or 7 months of age, they cannot sit independently.

Notes

Infant Development Milestone Chart

	6 To 12 MONTHS	12 To 24 MONTHS
MOTOR DEVELOPMENT	• Holds head steady. • Sits in lap without support; grasps book, puts in mouth drops, throws book.	• Hols and walks with books • No longer puts books in mouth right away • Tu rns board pages.
COMMUNICATION AND COGNITION	• Smiles, babbles, coos likes, • Likes pictures of baby faces. • Begins to say 'ma,' ba', 'da', • Responds to own name • Parts picture to show interest.	• Says simple words, then 2 to 4-word phrases. • Gives book to adult to read. • Points at pictures. • Turns book right-side up. • Names pictures, follows simple stories.
ANTICIPATORY GUIDANCE	• Talk back and forth with your bab; make eye contact, • Cuddle, talk, sign, read, and play. • Point at and name things; nose, ball, baby, dog. • Follow baby's cues for 'more' or 'stop'. • Play games such as 'peek-a-boo' or 'pat-a-cake.'	• Smile and answer when your child speaks or points. • Let your child help turn the pages; keep naming things. • Use books in family routines; naptime, playtime, bedtime; on the potty; in the car, bus. • Use books to calm or distract your child while walking.

By about 8 months of age, infants usually learn to pull themselves up and hold onto a chair and many can stand alone by 10 to 12 months of age. Infants, who have just learnt to walk, go down steep slopes rather discriminately, often falling but soon they become experienced walkers.

By 13 to 18 months of age, they move all over the place. They can pull a toy attached to a string. They can also start climbing up a number of steps using their hands and legs. By 18 to 24 months, toddlers can walk quickly and run a short distance. By the age of 2 years, toddlers become more skilled in exploring their environment using their newly achieved motor abilities. They can balance themselves while picking up objects from the floor while standing. They can stand and kick a ball without falling.

Let us now read about fine motor skills during infancy. At birth, infants hardly have control over fine motor skills. Soon they begin to reach out and grasp objects in their environment. This is a significant achievement which infants keep refining during the first 2 years of life.

13.1.2 Physical Development during Early Childhood

During early childhood both boys and girls slim down as the trunks of their bodies gain length. This is the time when children's movements in the environment becomes almost 'automatic' as they can move their legs and balance the entire bodies with more confidence and carry themselves more purposefully.

At 3 years of age, most children enjoy simple movements such as hopping, jumping and running. In fact they take pride in showing how fast they can run across a room and how high can they jump. By 4 years of age, they become more adventurous in their play activities. They are able to climb up and down the stairs with one foot on each step.

By early childhood, children have mastered the ability to pick up the tiniest objects between their thumb and forefingers. By 4 years of age, children's fine motor coordination becomes even more precise. By age 5, their arms, hand and fingers move together in tandem with each other.

13.1.3 Physical Development during Middle and Late Childhood

Physical growth and development slows down but is rather consistent during middle and late childhood. This is often considered a period of calm before the rapid growth spurt of adolescence. There is increase in height and weight. The increase in weight is mainly due to increase in the size of skeletal and muscular system as well as the size of body organs.

Changes in body proportions are among the most pronounced physical changes in middle and late childhood. During this period, head circumference, waist circumference and length of legs in children decrease in relation to body weight. Bones continue to harden in this period. "Baby fat" decreases while muscle tone improves further in middle and late childhood.

Running, skipping, climbing, swimming and bicycling are just a few of the many physical skills that children master at this age. These skills become a source of pleasure as children play games using these play capabilities. By middle and late childhood, children can use their hands as tools. They can use their hands to hammer, paste, tie the shoe laces, button clothes etc. By age 10 children become better at using their hands to write letters properly. By ages 10 to 12 years, children's hand movements become complex and intricate. Now they have fine motor skills enough to produce fine craft materials.

INTEXT QUESTIONS 13.1

Fill in the blanks-

1. Changes in height, weight and body proportions are termed as ……………..
2. Large and small muscle movements are required for ………… motor and …………….motor skills respectively.
3. Middle and late childhood is the time when physical development slows down but is rather ……………………
4. Increase in body weight during middle and late childhood is mainly due to increase in size of …………..and …………..system.

13.2 COGNITIVE DEVELOPMENT

Cognitive development refers to how children think. In this chapter we will lay emphasis on how children thinking changes from one developmental stage to the other.

Piaget proposed that just as our physical bodies have structures that help us adapt to the outside environment, similarly we have mental structures to adapt mentally to the information in the world around us. They build schemes that are the smallest units of thought to do this. Let us briefly study at the processes through which children construct knowledge about the world around them. Piaget believed that children use the following processes to actively construct their own cognitive worlds-

i. **Adaptation**: This occurs when children adjust their current information about the world to new environmental demands. This involves two processes-

a. **Assimilation**: When children incorporate new information into their existing schemes, they are said to be assimilating information. For example, a child might call all running vehicles on road ‘car’ as s/he has an existing scheme for a ‘car’.

b. **Accommodation**: In this second process, the above mentioned child learns that motor cycle and trucks are not cars, and hence modify his schemes of what cars are, based on this new information. This is called accommodation which occurs when children adjust their schemes to fit new information and experiences.

Notes

ii. **Organization**: All children organize i.e. group and categorize information (and schemes) to make better sense of the world. This is called organization. For example, in the above stated example the child reorganized the information s/he had and made different categories of vehicles in her/his mind such as cars, motor cycle and trucks. The child was cognizant of the similarities and dissimilarities between these categories and based on these s/he modified and organized this into newer categories.

iii. **Equilibration**: This is a mechanism which explains how children shift from one stage of thought to the next. All children experience cognitive conflict or disequilibrium in trying to understand the world, but eventually they resolve this conflict about new information and reach the state of balance, or equilibrium of thought. For example, in the example given above, the child got confused when s/he encountered that all vehicles are not cars. This brought the child into a state of disequilibrium but when the child realized that all vehicles are not cars and the conflict was resolved; then the child came to the state of equilibrium. Children resolve these cognitive conflicts as their thought becomes more advanced. These back and forth movements between states of equilibrium and disequilibrium are called equilibration.

Keeping these processes in mind, let us study how children develop cognitively during infancy and childhood.

13.2.1 Cognitive Development in Sensorimotor Stage

Children from birth to two years of age are in the sensorimotor stage of cognitive development. In this stage, they understand the world by co-coordinating sensory experiences (such as seeing and hearing) with physical and motor actions. Cognitive achievements during infancy are as follows-

1. At the beginning very young infants suck anything that comes in contact with their lips but later they learn to adapt their sucking scheme and suck differently at different objects. Infant actions are first directed towards their own bodies (for example, sucking their own thumb) and later directed towards the outside environment (putting another object into their mouth).

2. Infants begin to understand that objects and events continue to exist even when they are out of sight. This is called object permanence. You must have observed that 8 to 9 month olds would not reach for a ball if it has disappeared whereas an 18 month old child would reach for it.

3. **Imitation**: Around 4 months of age infants copy or reproduce someone's act or language which is called imitation. Till 8 months of age they imitate only those actions that they already able to produce. In other words, if someone makes the actions and sounds that the infant can produce then the infant copies those from the person making them. But if the person makes any new actions and sounds that the infant has not already mastered, then the infant cannot make those. By 8-12 months, infants are able to imitate behaviours slightly different from what they usually perform. Ability to imitate improves further in the coming months and by 18-24 months, infants become capable of deferred imitation i.e. they can remember, recall and enact or imitate a person or an event that is currently absent from the scene and the infant may have observed at an earlier point of time.

13.2.2 Cognitive Development during Pre-operational stage

The Pre-operational stage extends from 2 to 7 years of age.

- The first sub-stage of pre-operational thought called the symbolic function occurs roughly between the ages of 2-4 years. In this sub-stage children begin to represent the world with words and images. For example, children would start using the term 'cycle' for the object or picture of a cycle or 'ball' for the object ball. They use scribble designs to represent what they are thinking about and also engages in pretend play. You must have observed small children playing doctor-doctor, teacher in a class etc.

- The second sub-stage of pre-operational thought called the intuitive sub-stage occurs roughly between the ages of 4-7 years. In this stage of pre-operational thought children bombard adults with all sorts of questions about the world they live in. This shows they are beginning to use primitive reasoning in figuring out why things are the way they are.

However, children's understanding in this stage is also very limited. Pre-operational children's thought is characterized by -

- **Egocentrism**: It is the pre-operational children's inability to distinguish one's own and someone's perspective. For example, in the picture a child at this stage may not understand that a person sitting at different spot (B) than them (A) will see a different view of the mountain as compared to what they are seeing.

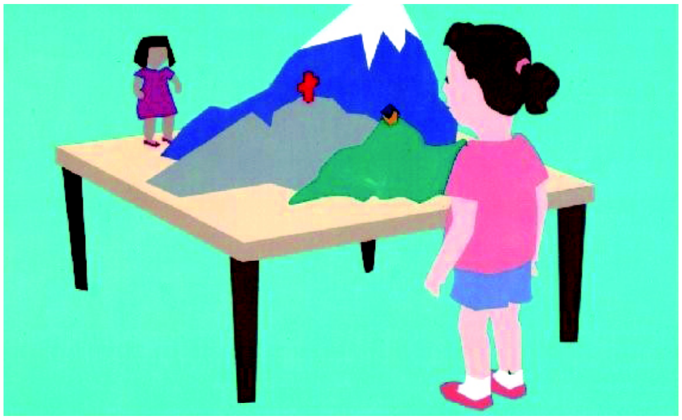


Figure 13.1: Piaget's three-mountain problem

- **Animism**: It is the belief that inanimate (non-living) objects have life-like qualities. For example, a pre-operational child might believe that the angry sun is chased by the clouds. Here, just as living objects have emotions and their actions are directed by their emotions; emotions are being attached to life-less objects.
- **Centration**: Children in pre-operational stage are able to 'centre' their attention on only one aspect or characteristic of the object and exclude all other aspects.
- **Lack of conservation**: In this stage, children fail to understand that altering an object's physical appearance does not change its basic properties. For instance, an adult understands that a certain amount of liquid remains the same, regardless of the shape of the container in which the liquid is poured. But a pre-operational child might believe that out of the two different sized containers, one might have more and the other might have less liquid even when the same amount of liquid is poured into the two containers.

13.3.3 Cognitive Development during Concrete Operational stage

Concrete operational stage lasts approximately from 7-11 years. In this stage, children start applying logical reasoning to problems but their thinking is tied to specific or concrete examples i.e. children can perform concrete operations or mental actions on real, concrete objects. For example, they can solve arithmetic problems like addition, subtraction, division when concrete objects are given to them. Some of the other cognitive attainments of concrete operational thought are mentioned below-

Figure 13.2: Discripton not mention in word file

- **Conservation**: To understand conservation better, refer to Figure 2 once again. When this activity is done with concrete operational children, they are likely to focus on both dimensions of the beaker, i.e they will take both height and weight into consideration, when deciding which of the two beakers has more liquid in it. Thus, children in this stage are able to conserve liquid, length, number, mass, of objects and substances.

- **Classification**: Concrete operational children are able to divide and categorize objects into sets and subsets by understanding their relations. For example, they can categorize fruits and vegetables of different types in multiple ways such as those based on their colour, taste, size and so forth.

- **Seriation**: It is the ability to order objects along a quantitative dimension. When children of this age are asked to order sticks by length, they can put the sticks in correct order, either ascending or descending whatever is asked for.

INTEXT QUESTIONS 13.2

1. Match the following

a. Organization	i. Adjusting exiting schemes to fit new information and experiences
b. Assimilation	ii. Back and forth movements between states of equilibrium and disequilibrium
c. Accommodation	iii. Incorporating new information into existing schemes
d. Equilibration	iv. Grouping and reorganizing information

2. State which of the following statements are 'true' or 'false'

    1. Piaget believed that children actively construct knowledge about the world around them.
    2. 4 months old infants can imitate actions that they cannot even produce.
    3. Preoperational thought is egocentric.
    4. Children in the concrete operational stage can perform concrete operations or mental actions on real, concrete objects.

13.3 SOCIO-EMOTIONAL DEVELOPMENT

Have you ever thought how do children develop an understanding about themselves and others? How do they use this understanding to get along with others? How do they develop emotions?

In this section let us study how children develop a sense of self; interact socially with other people; develop and learn to manage their emotions from infancy through adolescence.

Social development refers to a child's ability to interact with others in their environment. It involves a number of social skills such as learning to act as per the rules and regulations of society, getting along with others, participation and involvement in social groups and so forth. This ability is closely entwined with the ability to understand and manage one's own emotions and judging the emotional reactions of others. Emotional development refers to the development of emotions and feelings.

Socio-emotional development is a gradual process through which children acquire the ability to understand, experience and manage emotions of their own as well as others. This helps them in developing healthy interpersonal relationship with others. Socio-emotional development involves learning many social skills such as learning to act as per the values and regulations of the society, getting along with others, participation and involvement in social groups and so forth.

13.3.1 Socio-emotional development during Infancy

When infants begin to understand that the child they see in the mirror are they themselves, this is the time when they begin to understand that they are a separate entity in the environment around them. Self-recognition begins by 18 months of age and is usually fully attained by 2 years of age. This is the beginning of understanding to self as distinct and unique.

Crying is the most basic mechanism newborns have for communication. It is the way through which they express their emotions. Emotions such as joy, sadness, anger, surprise and fear that are present in the first months of life are called primary emotions. Since parents observe their babies more closely than other people, they can better differentiate between infant's 'basic' cry from 'anger' cry and 'pain' cry. They can also understand reactions of joy and fear in their babies.

Babies interact and connect socially with other people in their own environment through smiling. It is a way in which infants communicate their emotions. Until around 2 to 3

Notes

months of age, a smile does not occur in response to external stimuli, but appears reflexively, especially during sleep. But after 2 to 3 months of age, infants begin to smile in response to external stimuli. This response may be to a familiar person or an amusing event in the environment.

Another significant emotion in babies is fear, which typically appears at about 6 months of age and peaks at about 18 months. The most frequent expression of an infant's fear involves stranger anxiety in which infants show a fear of persons they do not recognize. Along with stranger anxiety, infants also experience fear of being separated from their mothers or primary caregivers. This leads to separation protests, where the infants cry out aloud and resist separation from the mother or primary caregiver. Not all infants show distress when they either encounter strangers or are separated from the mother. Whether an infant will show stranger anxiety or not, depends on the social context and the characteristics of the stranger. Infants show less stranger anxiety when they are in their familiar settings and feel secure by mother presence. Infants 'read' the emotions of other people, especially. their mother before they act. They look at her to see if she is happy, angry or fearful. They use her reaction as a source of information on how to act in a situation. This is called social referencing.

Around 2 year old children start recognizing themselves in the mirror or in a photograph. This indicates the beginning of understanding of self as distinct and unique. During this period they also use words like 'I', 'me', and cry for things 'its mine'.

13.3.2 Socio-emotional Development during Early Childhood

In early childhood children can verbally communicate about themselves, but they define themselves in concrete terms. Their descriptions center on what they know, what they can 'count' or tell and what are their possessions such as toys and other play materials. These descriptions are woven around physical and material attributes and activities that they can do.

Early childhood is the period of childhood when children develop an understanding of themselves and begin to see social comparisons. This thus becomes the period of development of emotions that require evaluation of oneself and consciousness. These are called self-conscious emotions. They emotions include empathy, jealousy and embarrassment. These first appear at about one and a half years of age. There are other emotions such as pride, shame and guilt which appear at about two and a half years of age. These appear when children are able to understand societal standards and rules and evaluate their behaviour against those.

Development of evaluative, self-conscious emotions is influenced by parents and other people's responses to children's behaviour. When children feel successful by achieving a particular goal, they feel joy and express pride. On the other hand, children experience shame when they have not met the standards or goals. It is a child's reaction to failure or success and is evaluative in nature. Since what other people say about children influence them and hence parents and other people should be careful about what they say and how they behave with children.

The ability to understand and talk about one's own and other people's emotions increases in children in early childhood stage. Between ages 2 to 4, children acquire more words to describe their emotions. They also start relating the causes and consequences of feelings. Their increased ability to deal with emotions gets reflected in their usage of words in pretend play. By ages 4 to 5, children start understanding that same events can elicit different emotions in different people. They become better at understanding social situations and emotional reactions to those social situations. They express their emotions keeping the social implications of those expressions in mind.

13.3.3 Socio-emotional Development during Middle and Late Childhood

Children's self-evaluations become more complex during middle and late childhood. This is the period when they start defining themselves in terms of their internal characteristics. These also include their subjective inner states. For instance, they may say that 'they are smart and popular'. They may also talk about their affiliations to their social groups such as school, class etc. in their descriptions of themselves. They may start comparing themselves with others. Moreover, they may not just talk about the person that they are, but may also talk about what they aspire to become.

Their increased social understanding about themselves and other people during middle and late childhood, help them understand different aspects of a social situation. This gives them an edge at understanding their own emotions and emotional reactions of others. Their ability to understand complex emotions such as pride and shame increases. They begin to understand that same situation can trigger different emotions in different people.

Children show a marked improvement in suppressing or concealing negative emotional reactions. For instance, if they anticipate punishment in response to display of anger, then they learn to conceal their anger. In fact this is the time when they start reflecting on their own emotional states and start using strategies for redirecting their feelings. By now, they have learnt to engage themselves in different activities to distract themselves from troubling emotions.

INTEXT QUESTIONS 13.3

Fill in the blanks:

1. Infants show fear for persons they do not know. This is called ________________.
2. Infants cry and resist separation from mother. This is called __________________.
3. Socio-emotional development means managing the ____________ of oneself and others.
4. Children gradually develop evaluative emotions in response of people's reactions to children's behaviours. These emotions are called ______________.

13.4 ISSUES AND CONCERNS DURING INFANCY AND CHILDHOOD

Each of the developmental stages has its own issues and concerns that children in these stages have to deal with. These concerns are significant for the children as well as for their parents and teachers. Some of these are discussed below.

13.4.1 Issues and Concerns during Infancy

Role of early stimulation: Early stimulation is used with children from birth to age 6, with the aim of optimizing infants' development in different domains. The goal of the stimulation is not accelerating development or forcing the child to achieve goals that they are not prepared to meet, but to recognize and encourage the potential of each individual child and present challenges and appropriate activities to strengthen their self-esteem, initiative and learning. Early stimulation may be given in all domains of development such as physical and motor, language, cognitive. Infants may be supported to sit, crawl and walk. Infants learn to communicate better if their earlier attempts at usage of speech are promoted. Children learn to use language more confidently when they feel that the persons in their environment are receptive to their attempts at using speech. Their mistakes get corrected in due course of time. Similarly, to optimize cognitive attainments, children should be provided with a rich and stimulating environment where they get a chance to explore objects and play around without fear. This makes them better at experimenting with their environment and rests their curiosities.

Early Identification of Developmental Delays: As already discussed in the sections above, certain competencies in different domains of development, are expected during each of the periods of development. Although there are individual differences in the attainment of these competencies yet there is a general developmental pattern and range that remains alike for all children. In case a child is observed to show a delay in this developmental pattern, then this may be a cause of concern. To put it simply, if a child does not start to walk and attain other physical milestones, begin to communicate and use speech appropriately. When all children of her/his age have already mastered these, then this must be brought to the attention of experts in this field. Failure to achieve developmental milestones is a serious concern and any delay in reporting means delay in timely intervention. It is significant to mention here that many of the developmental lags can be rectified by early intervention.

Dealing with Infant Anxieties: As mentioned above, infants show stranger and separation anxieties. It is up to parents how to deal sensitively with infants over these anxieties. If infants are introduced to the strangers in a non-threatening way, they are more likely to get comfortable in the presence of the stranger. Stranger or visitors in the family should also be briefed and requested to approach the infants after meeting other persons in the family. Their friendly behaviour with others makes the infants feel that the stranger is harmless. In addition to that, whenever parents especially mothers are leaving the infants behind, they must leave them with those adults whom the children are familiar with. The infants slowly understand the permanency of the mother and understand that the mother may go away for brief intervals for work and once the work is over she is likely to return back to the infant.

Parenting concerns: Parents of infants first have the task to adjust their lives and daily routines as per the needs and requirements of the child. This is physically as well as emotionally a challenging task for the parents. In addition, fulfilling immediate needs of the child, such as feeding and keeping them dry and warm, take precedence over other things. Parents have to understand that early childhood experiences are formative in the child's life and essential for the growth of the child. The child is to be fed well and kept clean, the child learns to trust her/his environment as predictable and believes in the caretakers for being there for her/him. Hence, the role of parents in providing constant support to the child is significant.

13.4.2 Issues and Concerns during Early childhood

Toilet-training: One of the major tasks at the beginning of early childhood is toilet training. This task has two aspects-physical as well as socio-emotional. In terms of the

physical aspect of toilet training, children must be ready bodily to be able to tell or indicate in advance that need to go to the toilet. The socio-emotional aspect of toilet training is closely related to the reaction of parents' and other people in the child's environment to toileting. There are times when children are unable to communicate in advance the need to pass urine and hence pass urine at a place inappropriate to do so. In such a case, if the child is ashamed and made fun off or scolded badly, this leads to stress related to toileting. The child may start showing up the stress symptoms in terms of withdrawal, shyness or aggression. On the other hand, in the same situation, if the child is dealt patiently and responsively, then the child will become much more alert and confident about his/her physical states.

School readiness: You must have seen children crying and clinging to their parents resisting to go to playschool or pre-school. Early childhood is the time when children enter any form of play pre-school activities. Separation from informal setting of the home and getting used to the 'formal' arena of 'school' where all activities are timed and one has to follow the rules of participation is a huge task for the children in early childhood. Role of parents and teachers is significant in helping children settle down in schools. If children are given a positive and caring environment then this seemingly difficult transition becomes smooth for the children.

Autonomy and initiative: Children in early childhood are beginning to take control of their bodies and learning to do their everyday tasks on their own. Sometimes, when they mess up in their activities such as eating on their own, trying to bathe themselves, then parents either readily rush to help children and do their activities themselves or ridicule and shame the child on his/her incompetency. This makes the children under-confident of their attempts to do things for themselves. On the other hand, if children are given autonomy and encouraged for their initiatives they are taking, they are likely to feel secure and confident in doing things for themselves.

13.4.3 Issues and Concerns during Middle and Late childhood

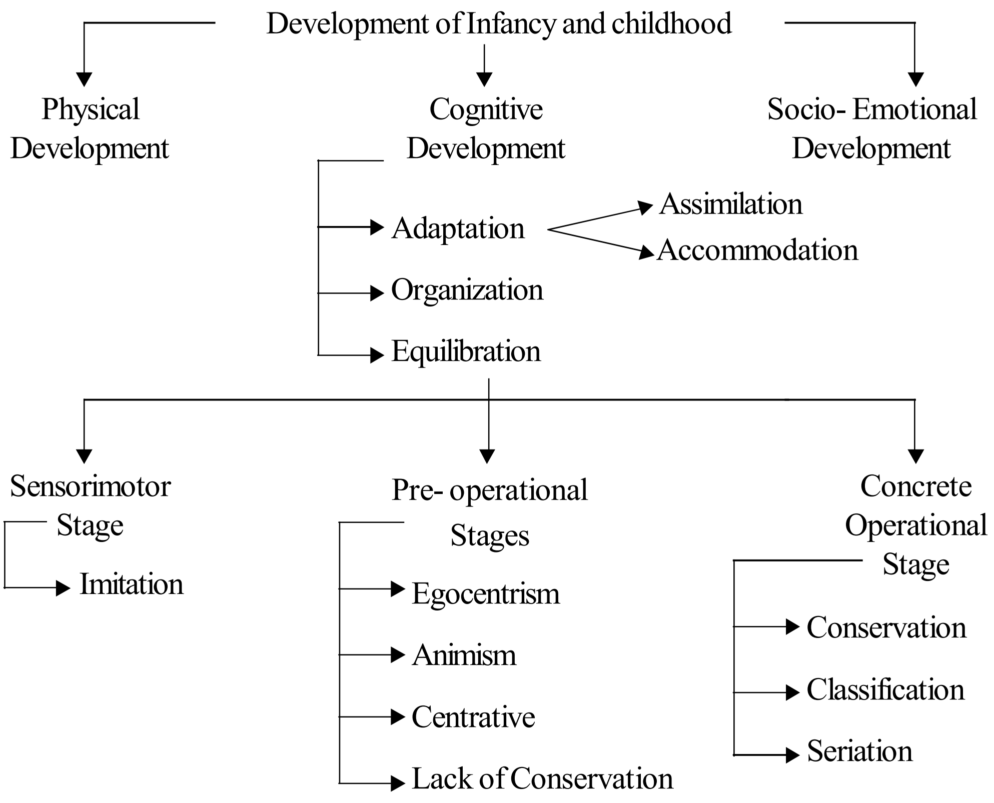
'Industry versus inferiority': Middle and late childhood coincides with Erikson's psycho-social stage of 'industry versus inferiority' (Erikson). It is the time when children's social world expands and their peers become significant part of their social circle. During this stage of life, two of the important developmental concerns are practicing future adult roles and responsibilities and learning to become industrious in whatever one does. This gets reflected most in children's games that they play with their peers. You must have seen children racing with each other on cycles, competing with each other in games of badminton, cricket, pithu and so forth. One can also see them step

Notes

into adult social roles temporarily and take care of younger siblings and guiding younger playmates. All such activities become the practice ground for children to believe in their capacities. Those children who are not able to show their competence and often 'loose' to others in games, sometimes develop feelings of inferiority about themselves. Role of parents becomes significant in this regard. It is their responsibility to help children understand that their achievements and failures are just one small part of their overall self. Often schools organize competitive programmes for children. Here, the teachers must explain the children that the whole purpose of such engagements is student participation rather than competition among them; winning and losing being part and parcel of the games and competitions and hence not to be taken too seriously.

Bullying: Bullying means situations where children face verbal and non-verbal aggressive advances and threats from children of their age or older than them. These can include hurt, humiliation, and or use of abusive language.. The children who bully and those who get bullied; both need attention and help from their parents, teachers and sometimes experts in the field.

WHAT YOU HAVE LEARNT



Issues and Concerns during Infancy and childhood

- Developmental Delays
- Parenting Concerns
- Toilet-Training
- School Readiness
- Autonomy and initiative
- Inferiority
- Bullying

TERMINAL QUESTIONS

1. Discuss physical development from infancy through late childhood.
2. Define the processes that children use to construct knowledge.
3. Discuss the limitations of preoperational and concrete operational thought.
4. Trace the development of emotions in children from birth to childhood.
5. Define object permanence, imitation, stranger anxiety and separation anxiety.
6. Discuss in brief the role of parents in dealing with the issues and concerns of the following stages of childhood-
   a. Infancy
   b. Early childhood
7. Define cognitive development. According to Piaget what processes do children use to construct their own cognitive worlds?
8. How socio-emotional development does takes place in early childhood?
9. Explain different concerns and issues during middle and late childhood?
10. How does cognitive development during concrete operational stage.

ANSWERS TO INTEXT QUESTIONS

13.1

Fill in the blanks:

1. Physical Development
2. Gross, Fine
3. Consistent
4. Skeletal and Muscular

13.2

Match the following

a-iv

b-iii

c-i

d-ii.

True and False

1. True
2. False
3. False
4. True

13.3

Fill in the blanks:

1. Stranger anxiety
2. Separation anxiety
3. Emotions
4. Self-conscious emotions.

14

ADOLESCENCE AND YOUNG ADULTHOOD

I am Mahika. I am a 16 year old girl. I have many interests and I want to do so many things. But I am very confused about who I am and what I can do. I have grown tall but I am told that I am still young to discuss family matters. My primary task is to study all the time but I cannot decide what I want to become. My brother is 14 years old. He is also confused about himself. My father keeps telling him that he should rather grow up to be 'macho'. But my mother and grandmother still consider him the 'younger baby' of the family. I am his elder sister but sometimes he is expected to be my 'protector'. With our growing age, our capacities have changed and so have our responsibilities.

As children we want to grow up soon believing that grown ups have certain privileges and rights which we don't seem to have as children. But soon we realize that childhood (at least of middle and higher socio-economic status group) was rather carefree as compared to adolescence and young adulthood. Maturity brings with it a set of privileges as well as challenges of all sorts, responsibilities and concerns. Although there is no definite age for the beginning of adolescence and young adulthood yet adolescence is seen to begin by age 12 years and young adulthood is considered to begin by 18 years of age. Young adulthood may extend up to early to mid 30s. In this chapter we will read about different life changes and challenges as one enters the stage of adolescence and moves through young adulthood.

LEARNING OUTCOMES

After studying this lesson, learner :

- explain the key characteristics that take place during adolescence and young adulthood; and
- reflect on various issues like problems in relationships, family issues, body image problems and the influence of media on adolescents.

14.1 PHYSICAL DEVELOPMENT DURING ADOLESCENCE AND YOUNG ADULTHOOD

Adolescence is a period of rapid physical maturation. This is first time in life, when obvious differences between boys and girls appear, which involves several bodily changes and hormonal upsurge. Features and proportions of the body undergo changes. This is also the period when an individual becomes capable of reproducing. It is marked by puberty.

Adolescent girls experience menarche, which is the first menstruation. The age for menarche is around 9-15 years. Girls also experience growth in height, widening of hips, appearance of hair in armpits and pubic area, breast enlargement and so forth.

Adolescent boys experience increase in height, size of penis and testicles, growth of hair over different parts of the body such as face and armpits, changes in voice and widening of shoulders.

The growth spurt begins about 2 two years earlier for girls than boys but it lasts longer for boys. For Indian girls, growth spurt occurs at approximately between 10 and 13 years of age and for Indian boys, it occurs between 12 to 17 years of age (Sharma, 1999). It is important to note that the most significant factors that influence puberty among boys and girls are heredity, hormones, weight and body fat.

As adolescent years end, a person enters the new stage of life that is called young adulthood. Generally by this stage one witnesses the completion of physical and sexual maturity. Individuals at this stage have gained their adult height. They continue to gain weight over the coming years. They are at the peak of their physical strength. They are able to undertake strenuous tasks for long hours. Young men and women also become more comfortable and in-control of their sexual development.

Notes

INTEXT QUESTIONS 14.1

Match the following in column A with Column B-

a.	Adolescent boys	(i)	Widening of hips
b.	Beginning of growth spurt for boys	(ii)	Widening of shoulders
c.	Adolescent girls	(iii)	12 to 17 years of age
d.	Beginning of growth spurt for girls	(iv)	First menstruation
e.	Menarche	(v)	10 and 13 years of age

14.2 COGNITIVE DEVELOPMENT DURING ADOLESCENCE AND YOUNG ADULTHOOD

You have already studied the first three stages of cognitive development as proposed by Piaget. The fourth stage of this theory is called formal operations. It begins from 11 years of age. This coincides with adolescence. In this stage, individuals are able to move beyond concrete experiences. They begin to think in abstract and more logical ways. They become more systematic in solving problems. Some of the cognitive attainments of adolescents are as under-

- **Hypothetical deductive reasoning**: Adolescents think more like scientists. They think of all possible solutions of a problem and systematically test those solutions. In other words, they develop hypothesis and systematically try out those options and choose the best possible option. For example, when given the task of seeing what affects the speed of the pendulum, they test like scientists varying the mass of the bob tied to the string, the length of the string, from how far we swing the pendulum, the height at which the pendulum is and so forth. They consider all explicit and implicit factors in arriving at the solution of the problem.

- **Propositional thought**: Formal operational thinkers can solve problems merely through verbal presentation of the problems. They understand relations between objects by making logical inferences mentally. They do not need to see the related concrete elements. Consider the statements given below-

    - Elephants are smaller than dogs

- Dogs are smaller than mice.
- Then which are the largest animals?

Formal operational thinkers are likely to focus only on the verbal logic of the statements; detaching them from the actual real-life situations where elephant is the largest of the three animals.

- **Idealistic thinking**: Adolescents might think what ideal standards are and they might compare themselves and others against those standards. Here, the adolescents will compare themselves with their role models and try to become like them if they think they are already not like them; or as good as they are. They will also think about an ideal society that they would like to make around them.

- **Adolescent egocentrism**: Adolescents are at times self-conscious. This is reflected in their belief that others are always interested in and following what they are doing. They think they are unique and hence that are always under the watchful eyes of others. They believe that they are 'on-stage' and everyone is always looking at them. This makes them conscious, sometimes of the way they look or appear and at other times, of what they do. This aspect of adolescent egocentrism that involves attention-getting behaviour is called *imaginary audience*. In addition to this, they develop *personal fable* which often shows in their feeling of being unique and indestructible.

During young adulthood, one reaches rational and logical adult cognition. Their thoughts become organized. They are now able to understand multiple perspectives of a situation and how different persons may perceive the same problem differently. Their competence in making decisions increases manifolds as they become better at generating options. They become more spontaneous in their use of strategies such as planning, monitoring and considering options. Other than that, their ability for critical thinking improves. They become better equipped in putting forth their points of view more sensibly. In fact their meta-cognition i.e. their ability to think about their own thinking improves and they are able to manage their thoughts more efficiently. This helps them to deliberately focus their attention and concentrate better on their tasks at hand.

INTEXT QUESTIONS 14.2

Fill in the blanks-

1. Thinking of adolescents is .... and ....
2. The ability of adolescents to think of all possible solutions of a problem and systematically test those solutions is called...........................
3. Imaginary audience and personal fable in adolescents is a feature of ....
4. Ability of young adults to think about their own thinking is termed as ....

14.3 SOCIO-EMOTIONAL DEVELOPMENT DURING ADOLESCENCE AND YOUNG ADULTHOOD

Transition from childhood to adolescence brings with it an upheaval of emotions and social expectations. As children start with growth spurt, expectations from their parents, older persons in family, neighbourhood, teachers and peers towards them start changing. The question of 'Who am I' comes up every now and then. This becomes the major cause of role confusion among adolescent boys and girls. Read the case studies given below to understand the issue of self and identity of adolescents' better–

Case Studies Sushma- Sushma is 13 years old. She has grown taller enough to reach her mother's height. Physically she looks mature but she is very uncomfortable with her growing body. She does not understand why her mother and grandmother make a fuss about the 'right clothing' that she is now supposed to wear. In her family there are certain restrictions on her food and movement inside and outside home while she is menstruating which makes her feel pulled down. She fails to understand why when she feels absolutely fine to run around and play like any other days in the ground, still she is asked to abstain from rough-housing.**Samaira**- Samaira feels that everyone at home expects her to behave like older people as she has grown up but unlike grown ups she has no privacy of her own. She cannot choose for how long she can talk over phone and whom she can be friends with. Moreover, she feels confused and sometimes annoyed why she cannot voice her opinions over matters of concern in her family. Whenever she makes a comment about any of their relatives, she is quickly dismissed by her parents and grandparents on account of being too young to speak up in 'adult' matters. It makes her wonder, on the one hand she keeps questioning her place and

role in the larger society and how she can play a key role in making the world around her a better place and on the other hand here at her own home she is still treated 'like a child'.**Mandeep**- Mandeep is a 16 year old boy who likes to drive a scooty. He is often asked by his mother to go to the market on his scooty and buy household items. He also goes to drop and pick his sister who is one year older to him to the tuition centre (as her mother considers it is not safe for her to go alone, especially during late evening). Mandeep likes to spend time with his friends in the evening and his father does not like this. His father often scolds him for wasting his precious time with '*useless boys who have no goals in life and will never do anything in life*'. Mandeep feels bad at his father's opinion about his friends who are important to him. He argues that he is old enough to decide who his friends will be and what will be his interaction with them.

In the three case studies mentioned above, the challenges faced when one transitions from childhood to adolescence are clearly evident. Adolescents feel overwhelmed by the fact that at times they are expected to be grown ups and behave like ones with regard to clothing, mannerisms, actions, responsibilities and tasks one can contribute in and at other times they are told to keep quite in matters of adult concerns. Likewise, they feel they are often denied their right to their privacy and choice; they have to face uninvited and unnecessary surveillance by parents, grandparents, neighbours, teachers and other adult members of the larger community.

Issues such as these are related to adolescents' confusion of their role. At one instance they are considered to be 'old enough' and at other instances, they are expected to behave as 'children'. They get conflicting messages from the various social agents such as parents, uncles, aunts, grandparents, teachers and so on in their environment. This makes it difficult for them to always behave appropriately in different social situations. They are already struggling with the physical, cognitive and socio-emotional changes occurring within themselves and conflicting information from the social environment around them makes it even more difficult for them to deal with such huge changes both within and outside.

Emotionally, adolescent boys and girls experience unusual swings of emotions. Sometimes they feel very good and show heights of love and affection and at other times they show loneliness, sadness and disinterest. Changes in hormones at this stage may be held responsible for such extreme emotional reactions of adolescents. You can also see these in the case studies mentioned in the box above. Unlike younger children, adolescents are capable of reacting strongly to what they perceive as unjustified treatment; hence, conflicts between them and their parents and other figures of authority

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can occur frequently.

During the stage of young adulthood, young men and women become apt at identifying and managing their emotions. They are no more slaves of mood swings. They are better at expressing their emotions in socially appropriate ways. They have most often resolved the confusions about their role and are more comfortable with their sense of self and identity. Young adult's interactions with others around them become more responsible. Unlike adolescents who may some days behave responsibly and at other days may become totally irresponsible, young adult's behaviour with others becomes more coherent and predictable.

INTEXT QUESTIONS 14.3

1. What challenges does adolescents face while growing up from childhood to adolescence?

ACTIVITY

Ask four adolescent boys and girls to answer the following questions-

- Who am I?
- What are my qualities that make me unique and different from others
- What is the goal of my life?

Compare their responses with each other.

14.4 ISSUES AND CONCERNS DURING ADOLESCENCE

There are a number of concerns that adolescents have to deal with in their everyday lives. These revolve around their career choices, body image, early and late maturation, substance use and drugs, engagement with media and technology and so on. These are discussed at length below.

14.4.1 Career Choices

Adolescence is the period of life when one in expected to decide about the future occupation that one may settle in. As adolescents are struggling with their quest for identity, they may one day declare to 'become something' and the next day they would declare to become something completely different; and this goes on until they finally

resolve this confusion and settle down on any one path. Gender differences are observed in adolescents' decisions regarding career. Boys are pushed more by their parents to settle down in their careers. For girls, settling into income generating occupations is more a matter of personal choice. Moreover, girls in the lower socio-economic group and in rural areas, despite laws setting age limits for marriage, are pushed into early marriage.

14.4.2 Body Image

Have you observed how much time adolescents spend looking into the mirror examining the minutest details about their bodies, especially their face. This is one of the psychological aspects of the physical changes that take place in adolescents. Their over pre-occupation and consciousness about their bodies heightens during puberty and continues until late adolescence. Adolescents are trying to understand and accept the changes occurring in their bodies and this makes them over-conscious of the way they look.

At times, adolescent boys and girls compare their bodies and the overall way they look with popular models. When dissatisfied with their bodies, they develop a negative body image of themselves. To achieve 'near perfect' bodies, they put themselves to extreme dietary restrictions and exercise regimes. Girls often get over-concerned especially with their weights. This may lead to unhealthy eating and excessive dieting. Anorexia nervosa is an eating disorder where adolescents nearly starve themselves in order to control their weight and remain thin. Another eating disorder involves adolescents to first eat lavishly and later self-induce vomiting.

14.4.3 Early and Late Maturation

Did you enter puberty around the same time as your friends did? Or was it earlier or later than them? Did your friends who entered puberty early or late perceived themselves any differently?

Early maturing boys often perceive themselves more positively and develop positive peer relations as against early maturing girls. This is so because early maturation in girls increases their vulnerability to a number of social problems. These girls face issues related to independence, dietary restrictions as per their culture and early sexual experiences. Although these girls begin to attain physical maturity but socially and cognitively they remain immature and this makes them susceptible to problems. They find it difficult to anticipate the long term problems accompanied by early independence and experimentation.

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14.4.4 Substance Use and Drugs

You might have seen young boys buying cigarettes and other forbidden substances from unscrupulous vendors outside schools and other public places. Although government has put strict restrictions on selling of such harmful products to children and adolescents yet the above mentioned sight is not uncommon. Adolescents often get into the trap of trying these substances 'once' to either 'show off' to their friends and others or sometimes under extreme peer pressure to consume these and later become habitual to them. At times, they start drinking alcohol, caffeine and smoke cigarettes as a way to cope with adolescence related stresses. Later, these drugs themselves become responsible for impeding and interfering with healthy coping mechanisms. Once habituated, adolescents find it difficult to leave these drugs. They fail to acknowledge that substance use and drugs have detrimental long term physical, socio and psychological effects on adolescents. These pose special health hazards to their development.

Some of the Symptoms of Drug Addiction

- Feeling that one has to take the drug regularly
- Having intense urge for the drug
- Over time, needing more and more quantities of drug
- Keeping a constant supply of drug so that one is not short of it
- Arranging for money by unfair means to buy drugs
- Continuing to take drugs even after knowing its harmful effects

14.4.5 Engagement with Media and Technology

In the contemporary times, adolescents have exposure to all types of media, it may be print or electronic. They have access to newspapers, television, Internet in phones, laptops, cyber cafes and so forth. This opens doors of unfiltered information to them. Some of them may discuss about this information with their friends, who have only as much understanding to deal with such information as they themselves have. Sometimes, adolescents' ability to deal with such information, which may be related to health, nutrition, sexuality, relationships, career and so forth, may be limited. This may make them vulnerable and susceptible to make 'wrong' choices.

At times, they may construct an entire virtual self-image where they interact with people on the internet with a disguised identity. They may post pictures and information about

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themselves that is so untrue and mismatched with what they truly are in reality. By doing so, they try to live a fantasy life which seems unthreatening. Their engagement with media may sometimes turn compulsive and they cannot stop themselves from always being 'online'; posting about every little aspect and event of their lives; and checking their and other persons 'status'.

14.4.6 Role of Peers, Parents and Teachers

With the advent of adolescence, relationship with significant members undergoes changes. Peers become more important and influence significantly the adolescents' lives. Adolescents like to confide in their friends on matters that are important to them. These may include issues pertaining to career choices, body image, clothes, desires, attraction towards members of the opposite sex, fears and so on. It may be noted that peers sometimes can be helpful in solving problems of their adolescent friends; however, they may also sometimes pressurize them for substance use, consumption of alcohol, cigarettes and drugs, conform to certain kind of clothing, hairstyle, language and so on.

Relationship of adolescents with their parents may undergo drastic changes. Parents of adolescents may start feeling that their children are no more sharing their heart out with them. Adolescents on the other hand may start believing that their parents do not understand their newly emerging concerns. They perceive their parents as rather outdated and inflexible. This is not to say that parents become unimportant. Parents continue to monitor and keep adolescents on track. Many parents talk to their adolescent children about the changes during adolescence and deal with issues of adolescents sensitively.

Teacher of adolescents are expected to be particularly sensitive to dealing with the above mentioned adolescent concerns. One of their key jobs is to guide adolescent boys and girls of the possible career choices. Along with that they are expected to give space to the adolescents in solving their problems and making decisions for themselves. Teachers become the anchors that adolescents can approach in need of advice and care.

INTEXT QUESTIONS 14.4

State whether the statements given below are True or False.

1. Adolescents are often satisfied with their bodies and overall appearance.

2. Early maturing boys often think positively about themselves and develop healthy peer relations.

3. Adolescent boys sometimes start drinking alcohol, caffeine and smoke cigarettes to 'show off' to their friends.

4. Excessive exposure to media is detrimental for healthy development.

Notes

ACTIVITY

In a diary, write how you have engaged with different forms of media over a period of one week.

Reflect and write some of the advantages and disadvantages of media in the light of how much time you have spent in engagement with media. In particular, how it has affected your physical, mental and emotional well-being.

14.5 ISSUES AND CONCERNS DURING YOUNG ADULTHOOD

Young adulthood brings with it certain issues and concerns related to relationships and vocational and career choices. Let us discuss this below.

14.5.1 Relationships during Young Adulthood

In Erikson's (1950) theory of psycho-social development, the crisis of young adulthood is 'intimacy versus isolation'. He proposed that for young adults finding a mate and having a loving relationship with that partner fulfils the need for intimacy. Those who are able to establish and maintain caring and affectionate relationships with partners of the opposite sex feel positive and fulfilled at this stage of life. On the contrary, those who fail to establish such relationships feel a sense of emptiness and isolation.

It is significant to note that many Indian girls become wives and mothers before they reach their twentieth year as they have been married early in life. And there are others who continue to get educated and delay settling down with a life-partner either through marriage or otherwise until mid 30s. Although this is a rather recent trend and limited to urban metropolitan cities, but it no longer remains uncommon to identify such young men and women.

With marriage, partners of both the genders learn to adjust their ways of living to adjust to their life-partner. The nature and degree of these adjustments may vary but both the partners face these settlement issues. They also face the question of starting a

family and subsequently raising children. Managing homes and social obligations that are part and parcel of getting married are other important issues in marriages.

14.5.2 Settling into Vocational or Career Choices

Another significant concern of young adulthood is completing higher studies and eventually becoming financially self-supporting. By young adulthood, most men are expected to settle down in their vocational choices. They no longer remain dependent on their parents to generate finances for them. Young adulthood is also seen as a time to work hard and establish oneself in one's chosen profession.

Gender differences are observed in identifying and working towards life goals. While the priority task for men is taking up a job, for girls whether to enter an income generating profession is a matter of personal choice. Young women may either choose to work outside home or to get married and settle into the role of a wife and eventually a mother. In recent times due to availability of educational oppourtunity, India has seen a encouraging number of women entering into the work force.

WHAT YOU HAVE LEARNT

Development of Adolescents

- Physical Development
- Socio-Emotional Development
- Cognitive Development
  - Hypothetical deductive reasoning
  - Propositional thought
  - Idealistic Thinking
  - Adolescent Egocentrism

Issues and Concerns during Adolescence

- Career Choice
- Body Image
- Early and Late Maturation
- Substance use and Drugs
- Roles of Peers, Parent s and Teachers
- Media and Technology

TERMINAL QUESTIONS

1. Discuss physical development in adolescent boys and girls.
2. Discuss the cognitive attainments of those in formal operational stage.
3. State the challenges of transitions from childhood to adolescence.
4. Elaborate differences in growing up as a male and female during adolescence and young adulthood.
5. Discuss adolescents' enagagement with media and issues of self-image.
6. Describe the role of peers and parents in the lives of adolescents.
7. Comment on the issues and concerns during young adulthood.
8. What are the issues and concerns related to substance use drugs?
9. Describe the different symptoms of drugs and substance addiction.
10. During the stage of young adulthood, how young men and women become apt at identifying and managing their emotions?

ANSWERS TO INTEXT QUESTIONS

14.1

a. ii

b. iii

c. i

d. v

e. iv

14.2

1. Abstract and logical
2. Hypothetical deductive reasoning
3. Adolescent egocentrism

Notes

4. Meta-cognition

14.3

There are different challenges adolescents' face when one goes through the transition from childhood to adolescence, and it is clearly evident as well. They get overwhelmed by the fact that at times they are expected to be grown ups and behave like ones with regard to clothing, mannerisms, actions, responsibilities and tasks one can contribute in and at other times they are told to keep quite in matters of adult concerns. Likewise, they feel they are often denied their right to their privacy and choice; they have to face uninvited and unnecessary surveillance by parents, grandparents, neighbours, teachers and other adult members of the larger community.

14.4

1. False
2. True
3. True
4. True

15

ADULTHOOD AND OLD AGE

What do people strive to achieve during young adulthood?

What sort of relationship gives satisfaction to people in middle adulthood?

What type of achievements lead to a sense of integrity in old age?

Alka, after completing her post-graduation, is planning to get married to Raj. Alka's friend, Rani, has taken up a job in a multi-national company after completing her studies. Anju, another one of Alka's friends, got married after graduation. She is the mother of a child. As her wedding day approaches, Alka has been feeling agitated thinking if she should get married first or find a suitable job. On the other hand, Raj is successfully settled in his job and is happy with how his career has been shaping. He has been thinking about starting a family. Meanwhile, Alka is still struggling to find a job of her choice. This is an example showing the emotional and social side of early adulthood.

Erik Erikson (1989) has developed a psycho-social development theory of personality. He described eight stages. Each stage is a transition period in an individual's life. According to theory, if a person passes successfully through each stage - that is, if he/she achieves whatever is required in that stage - then the person is said to be moving towards healthy development. Otherwise, the stages can cause crises in the individual's life.

Erik Erikson's theory of psycho-social development explained two important themes which dominate adulthood, which are love and work. During early adulthood, adults are faced with intimacy versus isolation. Young adults during this stage develop deep and intimate relationships with others. Those who get consistent care and love from others are able to form intimate relationships with them. However, those who fail to

Notes

find intimacy become socially isolated. Adults learn to function independently, become parents and develop friendships.

Alka's inner conflict is regarding whether to marry or to find a job of her choice. Here, Alka is trying to find her identity. Maturity involves a balance between the need for independence and intimacy. Without independence, adults may feel a lack of self-respect.

Erikson labled the middle adulthood stage as a period of generativity versus stagnation. Individuals at this time start showing concerns for others. They take an active interest in helping and guiding others. Parents help their children in choosing a career and mentor them. Adults who successfully resolve this stage feel generativity. Those who are unable to help others turn out to be self-centered and suffer from a feeling of stagnation.

During late adulthood, individuals enter Erikson's ego-integrity versus despair stage. When older adults look back at their lives, they often ask themselves questions like "what have I achieved?" and "what is the meaning of my life?" If they are able to find answers to these questions, they can be said to have achieved their goals. They feel a sense of integrity. If not, then they may perceive despair. It is the way we deal with our life's problems which determine the course and nature of life.

LEARNING OUTCOMES

After studying this lesson, learner :

- identifies the stages of development during adulthood and old age;
- states the key characteristics - physical , cognitive, socio-emotional - during adulthood and old age;
- understands the concerns faced during adulthood such as career transition, family responsibility and change; and
- recognizes the concerns of old age and act responsibly.

15.1 ADULTHOOD AND OLD-AGE

15.1.1 Adulthood

An adult is generally defined as someone who can take care of himself/herself, is fully-

developed, has the resources to be able to survive without external assistance and is well-organised to work independently. Important life events take place during adulthood such as getting a job, getting married and having children. The timeline for these events may vary across different countries according to their respective cultural norms. But the course of adult development maybe the same within a culture. During adulthood, two major events happen: choosing a career and selecting a life partner for marriage. It is a gradual transition from dependence to independence.

15.1.2 Old Age

This is the period of late adulthood which starts around the age of 60-65 years. It is often characterized by physical, cognitive and social decline. Early adulthood, middle adulthood, and late adulthood are the three main periods of physical, social and emotional development.

Table 15.1 Developmental Stages of Adulthood

Stages	**Age**
Early Adulthood	(18-40) years
Middle Adulthood	(41-60) years
Late Adulthood	61 years & above

15.2 LEVINSON'S THEORY OF ADULT DEVELOPMENT

Daniel Levinson (1986) has developed a stage theory of social development. He described four eras of adult life. Each era presents a different type of problem.

Table 15.2 Four Eras of Adult Life

Adolescence (11-17) years	Early Adulthood (18-45) years	Middle Adulthood (46-65) years	Late adulthood 65 years onwards

i. Adolescence (11-17) years

Levinson divides life into four major eras, each separated from the other stage by a transition period. The first transition occurs between childhood and early adulthood. It involves establishing one's independence both emotional and financial. After this , Individual enters early adulthood.

ii. Early Adulthood (18-45) years

Levinson talks about two key components of their life structure. They are the dream and the mentor. Dream is a vision of future accomplishments that the individual hopes to achieve in years ahead. Mentor is more experienced person who guides and helps a young adult. An individual's life choices during adulthood pertain to family, job and lifestyle. Throughout this period, they raise their children and achieve positions of seniority in society. They move towards independence. Adults begin to see their children settle in their own lives. It is a period of accepting responsibilities. People in this era start realizing that half of their life is over, and if they have to make changes in their life, they have to make them now. This era is equivalent to Erickson's generativity versus stagnation. People start showing concerns for others besides themselves and their families. They start guiding and nurturing younger generations.

iii Middle Adulthood (46-65) years

Adults who had faced a mid-life crisis are now living with the decisions which they had made earlier. Families and career are settled and established. Some people experience self-worth and self-satisfaction because they have achieved what they wanted to. Others may feel like much of their life has been wasted. This crisis may continue from earlier crisis or manifest itself as a new one. People in their 60s also begin to prepare themselves for retirement depending upon their sense of achievement.

iv Late Adulthood (65 years onwards)

Late adulthood is considered to begin at about 65 years of age. Many people at this point are satisfied with their lives and begin to relax and enjoy time with their children and grandchildren. They also find the time to pursue their own interests and hobbies. By the onset of this stage, it is important to find meaning in life rather than feel disappointed.

15.3 PHYSICAL DEVELOPMENT DURING ADULTHOOD

People change physically across their lifespan. As adults go through early, middle and late adulthood, they go through a variety of changes in their sensory abilities, muscular strength, reaction time, visual capacity, motor co-ordination, respiratory function, cardiovascular changes, immune functioning and reproductive capacity.

Aging is of two types

(i) Primary Aging

(ii) Secondary Aging

(i) Primary Aging: In primary aging, changes are based on biological factors such as cellular and molecular changes.

(ii) Secondary Aging: Secondary aging is related to controllable factors such as lack of physical exercise, poor diet, etc.

- In middle adulthood (41-60 years), the aging process becomes more visible. It is a period of increasing social interaction and responsibility. These adults help the younger generation in becoming competent and self-sufficient individuals. They are at the peak of their careers but a decline in their physical self is noticeable.
- After the age of 55, bones become less dense, and as a result men lose up to 1 inch in height and women lose 2 inches. Their weight also drops after the age of 50 years because of muscle loss. Stamina begins to decline.
- They find it difficult to see things in dim light because of the accommodative capacity of the eye declining. They are unable to discriminate between colours. Sensitivity to glare also increases with age.
- Hair begins to turn grey and wrinkles start appearing on the face.
- Physical strength and lung capacity also decreases.
- The hormonal cycle of adult women around the age of 50 years lead to the cessation of menstruation. The process is called menopause. Men's testosterone levels decrease at about the same age.
- Chronic health problems such as heart disease, hypertension and diabetes may also start at this age.
- Humans are complex beings, which is why aging of physiology can depend on a number of variables. Adults who indulge in routine exercises such as walking, jogging, etc., can reduce the negative effects associated with aging.

15.4 COGNITIVE DEVELOPMENT DURING ADULTHOOD

Physical changes are observable to the eyes. But what about cognitive changes? Do adults change cognitively? The human brain is responsible for cognition. Since human beings change and deteriorate physically across their life span, it is justified to expect

Notes

some cognitive changes in brain with age. But as we grow older, we also learn to solve a lot of problems with the help of our experience. This is why it is said that wisdom increases with age.

15.4.1 Memory and adulthood

Memory can get trickier with age. People who were able to maintain their daily schedules in their heads, now have to write it down and carry it around in their pocket diaries.

- Research indicates that older people are able to retain as much information as young adults, i.e., seven to nine items in short term memory. But their ability to transfer information from working memory to long-term memory declines with age.
- Old adults have more trouble with recall than the young adults. They find difficulty in recognizing others. They complain about recalling new information such as names and events. They find difficulty in retrieving information from long-term memory.
- They are unable to plan activities, decide what to say and how to explain their words.
- Sensory storage problem occurs in the short term memory rather than long-term memory.
- There is also some decline found in episodic memory. (Episodic memory is the memory dedicated to remembering events experienced by an individual and is associated with particular places and times.)
- Meanwhile, semantic memory remains the same. (Semantic memory is related to general knowledge.)
- Procedural memory (used in actions like tying shoelaces and cooking a recipe) seems to be stable across one's lifespan.
- Research also indicates that recall of meaningless information such as non-sense syllables or paired associates decline with increasing age.
- The memory of meaningful information remains largely intact, unless an individual suffers from Alzheimer's disease.
- Old people can improve their memory functions by practising mental exercises like playing chess, solving puzzles and reading. All the activities which make use think, reason and remember keep our memory intact throughout age.
- Brain weight of the individual decreases 5 to 10% by the age of 80 years and 29% by the age of 90 years. Almost 50% neurons of motor, visual and auditory

functions die in old age.

- The frontal lobe of the brain is related to working memory. It experiences a greater loss of neurons than other area of the brain.
- The hippocampus plays an important role in memory, but it also suffers from damage due to ageing.
- Women seem to experience less cognitive damage with ageing than men. It maybe because female sex hormones protect their brains from age-related decline.

15.4.2 Intelligence during Adulthood

Intelligence may also increase or decline with age. Researchers have found that various aspects of cognitive functioning remain stable throughout the lifespan of adults.

- As adults age, their crystallized intelligence increases and fluid intelligence declines. Fluid intelligence is the ability to use logic and solve problems in novel or new ways without taking help from pre-existing knowledge. Crystallized intelligence is the ability to use knowledge that was previously acquired through education and experience. Their ability to divide and control complex tasks deteriorates, which adults usually achieve through practice and experience in life.
- Some researchers suggest that general intelligence remains stable across life spans, but certain aspects of it decline with age. Old people do poorly on standardized intelligence tests because they have to manipulate objects within set intervals of time during the tests. Their reaction times becomes impaired with age. As a result, this may impair other related activities, such as driving skills.
- Cross-sectional studies have reported different types of results to show that cognitive and intellectual capabilities do decrease with age.

15.5 SOCIAL AND EMOTIONAL DEVELOPMENT DURING ADULTHOOD

- Adults have a strong need of affiliation and a desire to meet & interact with other individuals. They gain help, support and information from friends.
- Interacting with relatives, friends and neighbours is always beneficial as we age. We continue to interact with other individuals throughout our life spans. Adult individuals may have casual relationships with a lot of friends, but they may grow closer with a select few as they age. Although the size of their friend groups decrease over time, adults usually maintain close and strong friendships with a small number of people.

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ACTIVITY

Observe the adults staying in your locality to understand whether those who have a close knit and stable social support in their life are emotionally more balanced than those who lead a solitary life without social interaction.

INTEXT QUESTIONS

1. What do you understand by the term Adult and Old-Age?
2. What are the three stages of Adulthood?

15.6 PHYSICAL, COGNITIVE & EMOTIONAL DEVELOPMENT IN OLD AGE

15.6.1 Physical Changes During Late Adulthood/Old Age

- This is the period that begins in the 60s and lasts till death. People generally see significant biological decline during late adulthood/old age.
- Physical changes include the reduction in the pumping capacity of the heart and digestive system becoming less efficient.
- Skin loses its elasticity and as a result, wrinkles become more noticeable.
- Nails and bones become brittle because of calcium deficiency, which also causes arthritis in a lot of adults.
- Teeth may also fall out due to gum disease.
- Eye ailments also become a possibility in old age. Cataract of the eye and glaucoma are the most common. Cataract is the thickening of the lens of the eye, because of which vision becomes cloudy and distorted. Glaucoma occurs due to the damage to the optic nerve.

15.6.2 Cognitive Development In Late Adulthood/Old Age

- Information processing speed declines in late adulthood/old age. The most common reason is often due to decline in the central nervous system and brain functioning.
- Mental activities such as reading books, playing computer games and solving

crossword puzzles can improve cognitive skills and reduce cognitive decline.

15.6.3 Emotional Development In Late Adulthood/Old Age

- Old people usually experience loneliness after children leave home for various reasons like jobs, marriage, etc.
- Religious and social support systems in old age may help people achieve better physical and psychological health.

Table 15.3 The Cognitive, Emotional And Biological Symptoms Of Late Adulthood / Old age

Cognitive Symptoms	**Emotional symptoms**	**Biological symptoms**
Slow thinking	Loneliness	Joint pains
Confusion with identity	Irritability	Sensory deficits
Dullness of mind	Anxiety	Cardiovascular dysfunction
Feeling lost or confused	Depression	Respiratory decline
Deline in perceptual speed	Agitation	Age-related changes in lungs
Slow problem solving	Unexplained pain	Diminshed motor activity
Slow judgement	Less cooperation	Degeneration of muscles
Impaired memory	Less social interaction	Loss of coordination
Problem with language	Loss of appetite	Less effective immune system
Lack of attention	Sadness	
	Lack of energy	

15.7 CAREER TRANSITION, FAMILY RESPONSIBILITY AND CHANGE DURING ADULTHOOD

i. Choice of a career

Choosing an appropriate job and building a career are important goals for an adult. A career gives them a sense of security, self-worth and brings financial

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independence. A person may start at their first job, switch to a more satisfying or interesting job if required, retire and stop working outside their house altogether. Each of these life events is termed as a career transition and serves as an important era in their lifespan. The term career transition may refer to the process when an individual shifts to a new position or a new role in the same company or organization. There are various types of career transition which also include any undesired and unanticipated changes in an individual's career. There are two categories of career transitions

- Involuntary career transition
- Voluntary career transition

Voluntary career transition

Some individuals choose a career based on the following

- Wishes of their parents
- To earn money
- As a substitute for a job of their choice
- As a change from a different work or interest area
- As a result of their company moving their base to other country, where labour is cheaper
- As a result of their company forcing them to undergo a career transition

Career transition has become more common now. Employees change their job more frequently and a career change is also perceived more positively. Earlier career change was seen in a negative light, such as an individual being unable to perform adequately in a company, lacking in skills to perform or to hold a position, etc. Now that perception is changing. Research indicates adaptation to career change is important for the psychological well-being of the individual. Some individuals adapt quickly to career transitions, while others face anxiety or depression. Adulthood is a period of loss and decline, but there can be growth also. Many factors such as individual personality traits, age and sex contribute to how well they adjust to mid-life transition.

iii. Marriage and family responsibility

Adults adjust their lives after marriage and take care of the likes and dislikes of their partners. When both partners are working, they share the roles and responsibilities. After marriage, becoming a parent brings another transition in life. It can be stressful but coping depends on a number of other factors such as

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support from the family in bringing up the child and the level of happiness of both the partners. Sometimes only one of the parents has to take the entire responsibility of the child because of reasons like divorce or death of a spouse. More women are now working outside their homes. The stress of divorce affects working women greatly too. They are faced with taking care of the health and education of their children alone as well as coping with and balancing the workload in the office and at home. Yet, despite all the stress associated with parenting, adults find an opportunity for growth and self-respect as parents.

15.8 COMMON ISSUES AND CONCERNS OF LATE ADULTHOOD/OLD AGE

Some of the most common concerns of old people are:

- Financial insecurity
- Social isolation/Empty-nest syndrome
- Feeling left behind or left out by technology
- Declining health
- Malnutrition
- Feeling a lack of warmth and affection in their relationships

i. Financial issues of late adulthood/old age

Financial problems are often experienced by old people. As the individual grows old and retires from work, his finances become constraints. They have to depend on sources like their pension or a fixed income from their savings. These savings may not be enough to meet their medical expenses and household responsibilities. A major concern in their lives is their deteriorating health. They need regular medical check-ups. A large chunk of their income is spent on healthcare. Some of them may be diagnosed with major chronic illnesses. They need money for surgeries and medicines. Their savings are not enough to meet their medical expenses. They may slip into poverty as their earnings diminish. They do not find themselves in a position to do a job and earn a livelihood. Even if some of them may try getting a job, not many avenues are open for them because of their age. They may also face ageist discrimination. Many elderly people in India are exploited financially by their children. Another problem they are more prone to when living alone is theft and robbery. There are others who have to attend to the needs of their grandchildren or children. Some grandparents pay for higher education, which may be exponentially higher for foreign universities. Some may take a loan to support this, but have to manage their own households

alongside. In such situations, they may find it difficult to take care of essentials like cleaning, cooking and paying bills.

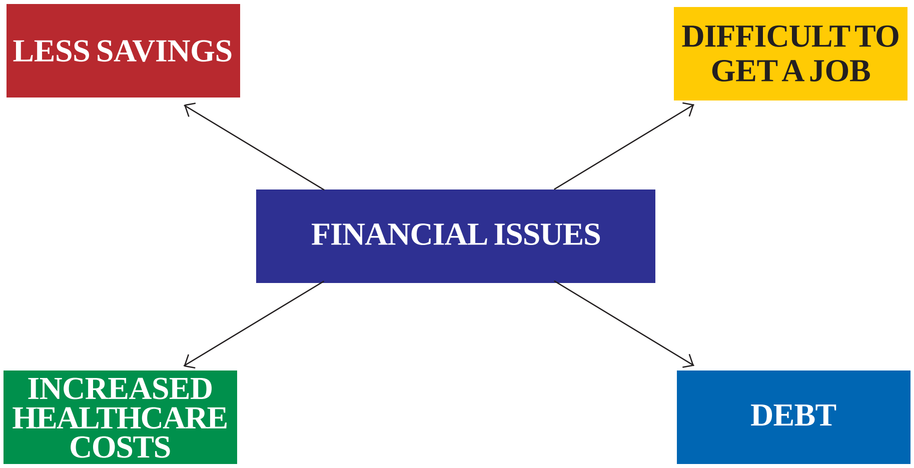

Figure 15.1. Financial issues faced by old people

Widowed individuals become more prone to financial difficulties. Although many of them have savings, insurance and a pension, others experience a sharp decline in their income. Economic dependence can be very stressful in late adulthood and even cause suicidal feelings. It stems from a sense of deep insecurity and low esteem due to low income. Therefore, good financial planning is crucial to maintaining adequate funds and reduce financial insecurity in old age. It can make aged individuals financially independent and take care of their own needs.

(ii) Health Concerns of late adulthood/old age

Arthritis and osteoporosis are the most common health problems among the elderly. Arthritis is the inflammation of joints in the body, while osteoporosis is the extensive loss of bone tissue and decreased bone density. It affects more women than men. Some behavioural factors also trigger biological decline. Old people who live alone and suffer from loneliness become inattentive to nutritious eating. This leads to vitamin deficiency. This may or may not affect their day-to-day functioning. Stress related to situational factors such as the loss of a loved one, diagnosis of chronic illness, financial losses and other family-related issues may also have severe impacts on the biological and psychological functioning of old people. Those individuals who take care of their health, do regular exercise and eat nutritious food full of vitamins and minerals and low in fat are found to be healthier. They have reduced risks of heart disease, hypertension, weight gain and osteoporosis.

Today, people all over the world people can expect to live longer than ever before.

Many old people are managing their chronic illnesses by adopting various healthy lifestyle interventions. But still, chronic health conditions lead to two-thirds of deaths worldwide every year. Most common issues faced by old people are:

- Hypertension
- Heart attacks
- Cancer
- Diabetes
- Arthritis
- Chronic pains
- Liver dysfunction
- Kidney dysfunction
- Dementia
- Alzheimer's disease

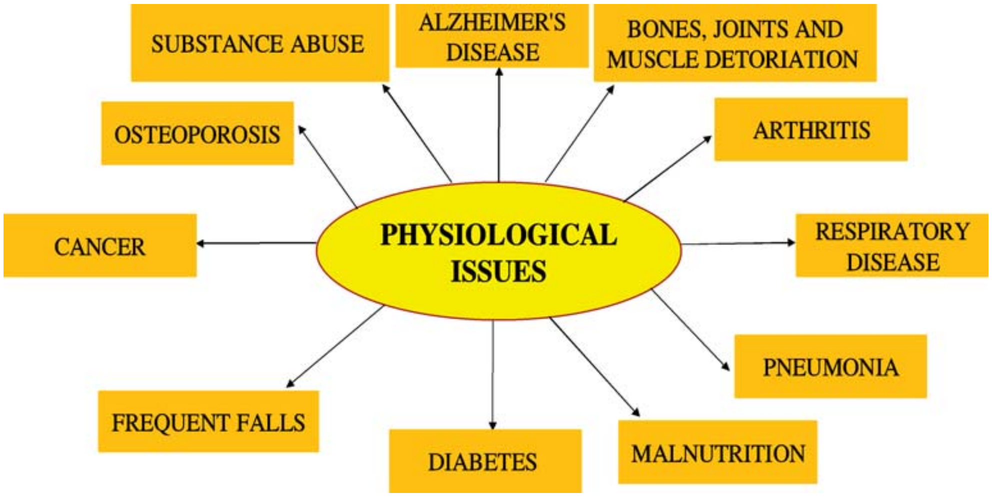

Figure 15.2 Most common health issues faced by old people

There are many diseases and illnesses which are specific to old people, but they are also more prone to other chronic and infectious illnesses. Most of them suffer from a long-term disease such as arthritis, Alzheimer's, hypertension, diabetes and cancer. Around 15 to 20% of the elderly over the age of 65 years also suffer from psychological disorders. However, the symptoms of psychological disorders are different in older and younger adults. One of the most prevalent disorders is depression. Unfortunately, it is often under-diagnosed and left untreated. Factors such as the loss of close family members, financial insecurity, loneliness and declining health trigger depression in old people. Depression may even be the side-effect of medicines which they consume to

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treat physical ailments. Dementia in older people may also be an underlying symptom of Alzheimer's disease. It is a progressive brain disorder leading to loss of memory and confusion. Doctors can prescribe a treatment plan and medicine to manage the disease, but currently, there are no cures for dementia.

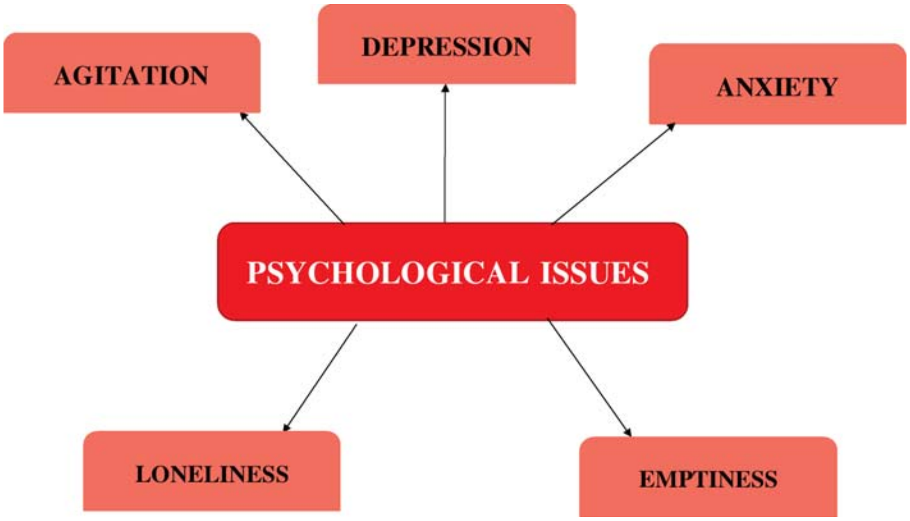


Figure 15.3 Psychological issues faced by old people

(iii) Emptiness in old age

Emptiness is a feeling of isolation. With advancing age, people lose contact with their old friends and find it difficult to initiate new friendships. Old people usually start feeling left out when their children leave the home to go abroad for higher education, jobs or change residence permanently. There are also cases where children ignore their parents when they get old, making them feel unwanted and lonely. The negative effects of emptiness on health in old age have been indicated by many researchers. Some of the contributing factors leading to emptiness are:

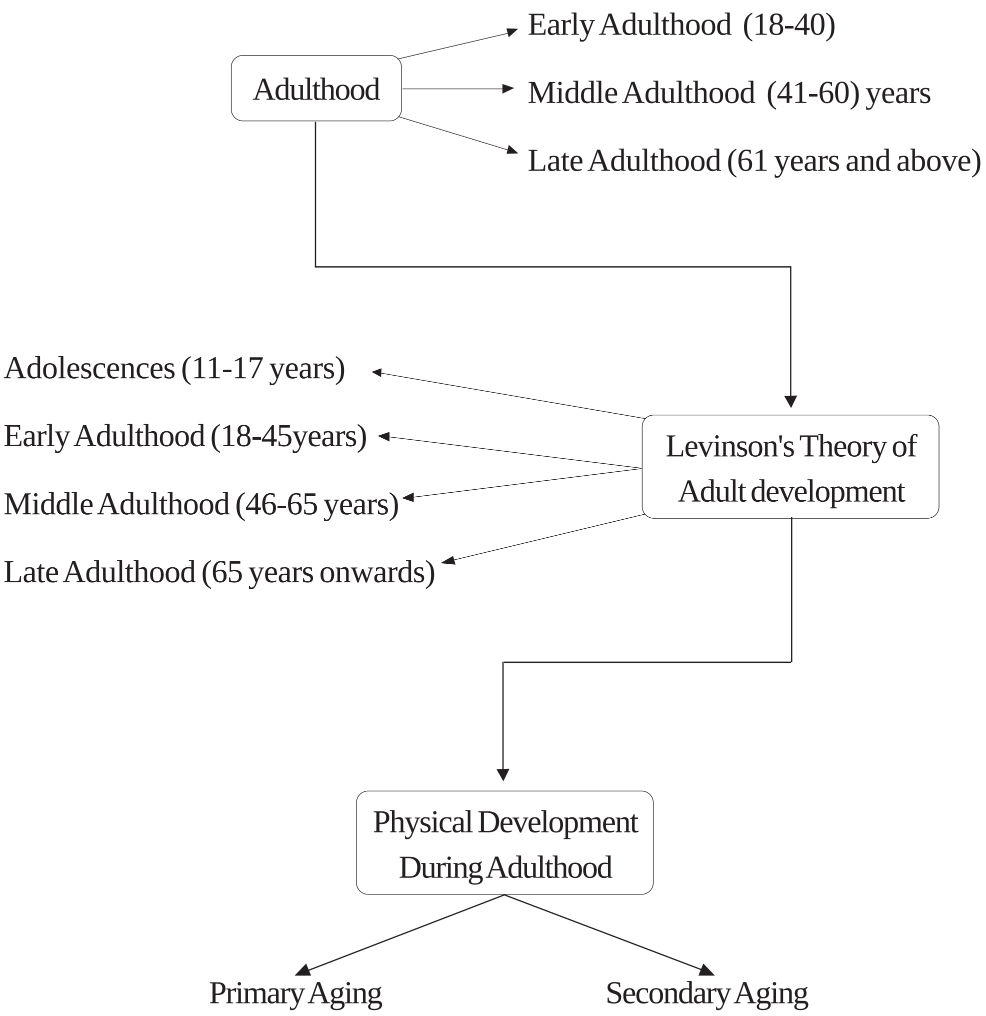
- Divorce
- Death of a spouse
- Living alone
- Inability to actively participate in activities
- Loss of socialization after leaving work/ after retirement
- Limited opportunities to participate in social gatherings or activities
- Children moving away
- Isolation because of chronic illnesses like cancer, Alzheimer's disease, etc.

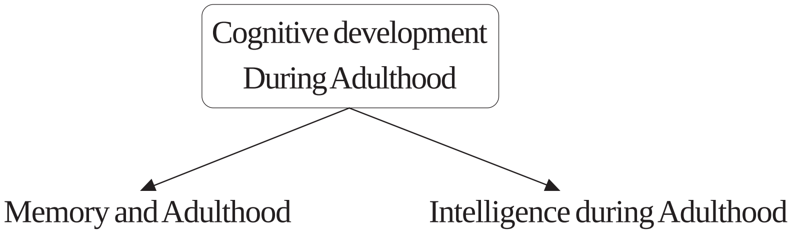
As individuals grow old, they face numerous psychological and social role changes that challenge their sense of self and feelings of happiness. They can maintain their

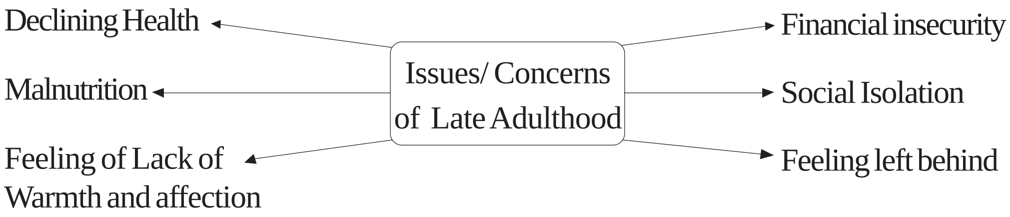
physical and psychological strength by engaging in regular exercise and adopting other healthy lifestyle habits. There is a need for the government to create guidelines and policies to support and protect the health, emotional and financial needs of the elderly. These may include:

- Recognizing the concerns of old citizens and acting responsibly
- Providing preventive healthcare services
- Helping the elderly in managing chronic illnesses
- Encouraging exercise and social activities for healthy aging

WHAT YOU HAVE LEARNT







TERMINAL QUESTIONS

1. What do you understand by physical development in middle adulthood?
2. What is cognitive development in adulthood?
3. What cognitive changes occur during middle adulthood?
4. Does memory improve as you get older?
5. What do you mean by career transition?
6. Write short notes on
   a) Social and emotional development during adulthood
   b) Emptiness
   c) Financial insecurity
   d) Health concerns
7. What are some of the transitions and challenges that adults face in their personal lives after marriage, particularly related to parenting and working?
8. What are some of the physical changes that occur during middle and late adulthood, and what are some factors that can influence the aging process?
9. What are the four eras of adult life according to Daniel Levinson's stage theory of social development, and what are the challenges associated with each era?

10. What are the specific challenges individuals face during the intimacy versus isolation, generativity versus stagnation, and ego-integrity versus despair stages?

ANSWERS TO INTEXT QUESTIONS

15.1

1. An adult is generally defined as someone who can take care of himself, is fully-developed, has the resources to be able to survive without external assistance and is organised enough to work independently. Old age is period of decline in physical and psychological factors.

2. Three stages of adulthood are:

Early Adulthood	(18-40) Years
Middle Adulthood	(41-60) Years
Late Adulthood or Old Age	(61) Years and Above

15.2

1. Middle adulthood refers to the period of the life span where an individual experiences physical decline such as greying of hair or hair loss, vision loss, and hearing loss.

2. Late Adulthood or Old Age is the period from age 61 years and above.

MODULE -4

Individual Differences

Human beings not only respond to the external world but also attend to themselves. In other words self is also an object and all of us deal with it. In recent years, self has been given significant place in the analysis of cognition, motivation and emotion. The kind of self concept which people have is also influenced by our culture. Understanding of personality has also been detailed out in this module. Various factors such as genetics, environmental and cultural influencing personality of an individual are also dealt with. Intelligence, key theories of intelligence and emotional intelligence and creativity has also been discussed.

16. Diversity and Individual variations

17. Self and Personality

18. Intelligence

16

DIVERSITY AND INDIVIDUAL VARIATIONS

When you look around, you will be able to see how different people are from each other. Every individual, be it human or non-human (such as animals) is a unique entity. Just as the fingerprints of no two individuals are the same, similarly there are numerous physical, physiological, psychological, social and economic differences among humans. These differences make our world full of diversity. A world where people not only look different but also think differently based on the differences in their psychological traits such as personality and intelligence. Thus, our lives unfold within social contexts that are populated by people who are different- from us and each other. In this chapter we will study the basic nature and causes of such differences. We will also learn to value the diversity that is created by these differences and to utilize such variations and differences in making the world a better place.

LEARNING OUTCOMES

After studying this lesson, learner :

- understands the meaning of diversity;
- illustrates the importance of diversity among people;
- describes various traits of diversity;
- explains factors causing diversity; and
- describes and evaluate the special needs arising out of diversity.

16.1 UNDERSTANDING DIVERSITY

Diversity refers to a range of people who differ from each other in a variety of ways. Even though in psychology, we strive to generalize theories and research findings in relation to many people, but at the same time psychology emphasizes a lot on individual differences. We all are same in some ways but different in many other ways. For instance, we all have same physical structure; however, the capacities of our sense organs differ. Similarly, we all have brain but the way we think differs. Some of us enjoy being around others such as in social gatherings, on the other hand, many of us might value more being alone and reading a book. Even though born to the same parents, siblings also differ from each other, sometimes to the extent that it is hard to believe that our sibling is actually our blood relative.

People may differ in many ways, such as their ethnic identity, sex/gender, cultural background, language usage, economic status, political affiliation, or religious belief. These specific dimensions of difference do not matter nearly as much as the fact that we think, feel, and behave differently from each other. Have you ever been amazed that you perceived a situation, such as giving a test, much differently than a friend? Perhaps you approached the test with optimism and confidence, regarding it as a potentially positive step in your career goals. Your friend, however, may have viewed the same scenario as threatening. We tend to project our own attitudes, feelings, expectations, and fears onto the situations we encounter and thus evaluate the situations differently resulting in differing behavior patterns.

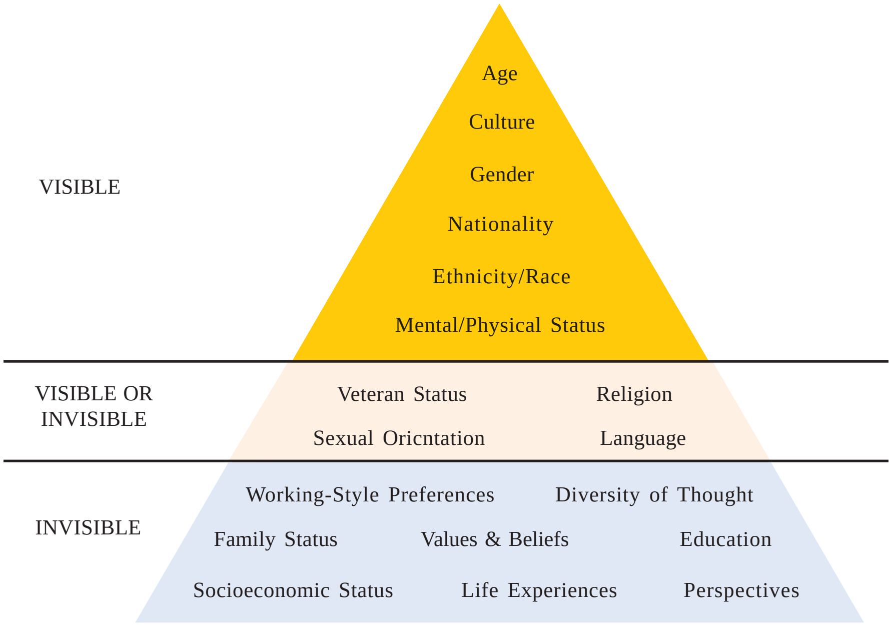


Fig. 16.1 : Classificaton of Diversity Traits

16.1.1 Classification of Diversity Traits

Broadly, diversity traits i.e. the ways in which people differ from each other can be classified under three heads (see Fig. 16.1):

1. **Visible diversity traits –** are traits which can be overtly observed and often impact the first impression of an individual. For example: Physical characteristics
2. **Visible or invisible diversity traits -**These are neither completely overt nor completely covert. At times these traits are immediately observable, on other times these might only come to surface after interacting with the individual. For example: Sexual orientation.
3. **Invisible diversity traits –** These are the differences which are covert in nature and thus come to knowledge only after keen observation over a period of time. For example: Religious beliefs or political beliefs.

INTEXT QUESTIONS 16.1

State which of the following statements are 'true' and which are 'false'?

1) Diversity is solely man made.
2) People of the same family can also be diverse.
3) Life experiences can lead to diversity.
4) Gender is an invisible diversity trait.
5) Diversity can be based on psychological differences.

ACTIVITY

For each of the following statements, write two names of people you know, first name should be of someone who falls in that category and second name of someone who doesn't fall in that category:

1. Is from same religion as yours.
2. Is short tempered.
3. Enjoys being around people.

4. Is good in mathematics.

5. Is thin.

6. Knows a language that you don't know.

7. Eats non vegetarian food

This exercise will help you understand that people are different from each other. They can differ in various ways. We live in a world full of diversity.

16.2 FACTORS CAUSING DIVERSITY

In above activity, while listing the names, you came across differences based on varied factors such as physical characteristics, religion, education, preferences towards varied food/hobbies, interests, choices etc.

Thus, it is important to understand that there are multiple factors leading to diversity. These factors can be classified as follows:

1. Physical

2. Physiological

3. Psychological

4. Social and Economic

5. Cultural

16.2.1 Physical Factors

Physical diversity is prevalent all round the world. It refers to diversity based on physical characteristics such as height, weight, color of the skin, gender etc. No two individuals except for identical twins have same physical features. Children might resemble their parents, however, only to some extent.

Physical differences are easily observable and thus fall under the visible spectrum of diversity. Due to genetic and environmental factors, people belonging to same region of origin, religion and family might display similar physical characteristics. Due to these intra -group similarities, humans often attach stereotypes with the entire community leading to prejudices and biases, we will discuss this later in the chapter.

Physical differences among people belonging to various regions of India can be attributed to the ancient migration of large number of races mostly from the Western and the Eastern directions across the Himalayas. Their dispersal into sub-continent has resulted in the consequent regional concentration of a variety of ethnic elements. India is an ethnological museum. The population of India can be divided in six main ethnic groups, namely (1) the Negrito (2) the Proto-Australoids, (3) the Mongoloids (4) the Mediterranean or Dravidian (5) the Western Brachycephals and (6) the Nordic. According to him, people belonging to these different racial stocks have major differences in physical appearances. For instance, the Negrito are characterized by dark skin color, short stature, and frizzly hair. The best representatives of this type are the Kadars, the Irulas, the Puniyans, etc. of South India. On the other hand, the Proto-Australoids are distinguished by scanty growth of hair on face and body. The eyes are obliquely set and show the presence of epicanthic fold. The face is flat with prominent cheekbones and hair is straight. They are the inhabitants of the sub-Himalayan region; the concentration is most remarkable in Assam and Burma Frontier.

16.2.2 Physiological Factors

Physiological diversity can be understood in two ways:

1. Co existence of a variety of species of flora and fauna on Earth.
2. Physiological differences among humans of varied ecological origins.

Between two populations occupying contrasting habitats, for example, differences in physiological performance may be derived from genetic differences, or from adaptation, or from onto genetic effects induced by growth and development in differing environments.

Some genetic disorders are more likely to occur among people who trace their ancestry to a particular geographic area. People in an ethnic group often share certain versions of their genes, which have been passed down from common ancestors. If one of these shared genes contains a disease-causing mutation, a particular genetic disorder may be more frequently seen in the group.

According to research, asians are more prone to tuberculosis, hepatitis B, intestinal parasites, Lactose intolerance and cancers such as lungs, breast, colon, stomach, and pancreas as compared to the rest of the world. African Americans are highly prone to hypertension, sickle cell anemia and diabetes. The combined overweight and obesity rates for African-Americans are higher than for European-Americans: 65% of African-

American men and 56.5% of African-American women are overweight or obese. Eastern European men commonly have diseases of the digestive system and women have higher rates of musculoskeletal complaints than the rest of the world. Native Americans/American Indians/Native Alaskans are almost three times as likely to have diabetes as non-Hispanic European-Americans of similar age. Native Alaskan men and women suffer disproportionately higher rates of cancer of the colon and rectum compared with European-Americans.

Thus, physiological differences arising from genetic factors, ancestral history, lifestyle and geographical conditions also make the world diverse. People living in various parts of the world have varying proneness to diseases.

16.2.3 Psychological Factors

Psychological differences among people are less visible, they can be only known after repeated and keen observation. Psychological diversity refers to the differences in human constructs such as cognitive ability, skills, attitudes, personality and so on.

In Psychology these differences can be scientifically measured through standardized psychological tests. These tests are reliable i.e. consistent in their results; valid, i.e. particular about what they measure and have established norms so as to compare one's score obtained on the psychological attribute with the others of similar age group.

The two most common psychological attributes studied in psychology to understand psychological diversity are:

1. Personality
2. Intelligence

Personality refers to individual differences in characteristic patterns of thinking, feeling and behaving. People differ from each other in personality dimensions such as Openness, Conscientiousness, Extroversion, Agreeableness and Neuroticism (OCEAN) :

Openness to experience - It concerns people's willingness to try new things.

Conscientiousness - It is the tendency to control impulses and act in socially acceptable ways.

Extroversion - It concerns where an individual draws his/her energy from and how he/she interacts with others.

Agreeableness - It concerns with how well an individual gets along with others.

Neuroticism - It encompasses one's emotional stability and general temper.

Many personality theories have given psychological classification of different types of individuals. One example of personality types is Type A and Type B personality theory. According to this theory, impatient, achievement-oriented people are classified as Type A, whereas easy-going, relaxed individuals are designated as Type B. You will study personality theories in detail in the next chapter.

Intelligence refers to the ability to acquire and apply knowledge and skills. It involves some different mental abilities including logic, reasoning, problem-solving, and planning. Individual differences in intelligence can be assessed using the concept of IQ – Intelligence quotient. IQ is the score most widely used to assess intelligence, and typically measures a variety of skills from verbal to spatial. Any person from any walk of life can be highly intelligent, and scoring high on one aspect of intelligence tends to correlate with high scores in other aspects.

Theories on intelligence have been divided into – uni factor theories, two factor theories and multi factor theories. As the names suggest, uni factor theories view intelligence as one overall measure comprising a wide variety of skills. While the two factor and multi factor theories state that there are *multiple* kinds of intelligence that humans possess in varying quantities, such as, visual-spatial, logical-mathematical, and interpersonal intelligence. Someone high in interpersonal intelligence would likely to excel at cooperating within a group, while someone with high levels of logical-mathematical intelligence would have a heightened capacity to understand numbers, patterns, and logical reasoning.

Thus, according to uni factor theories people differ from each other in terms of overall intelligence, on the other hand as per the two factor and multi factor theories people differ in various types of intelligence. Theories of intelligence will be discussed in detail in the chapter on intelligence.

16.2.4 Social and Economic Factors

Social traits are the most visible factors of diversity. They comprise of all the features attached by the society to the individual, such as, one's caste, class, race, religion and occupational pattern. People vary drastically from each other based on their social background and thus can be easily allotted to a particular category merely by quick observation. For instance, people of different regions use different types of dresses,

their eating habits and customs differ.

India is one of the best examples of social diversity. Salman Rushdie once wrote, "The country has taken the modern view of the self and enlarged it to encompass almost 1 billion souls. The self-hood of India is so capricious, so elastic, that it accommodates 1 billion kinds of difference. It agrees with its billion selves to call all of them "Indian."

As per the Census, conducted by the government of India in 2011, Hinduism is the most common religion in India, accounting for about 80% of the population. Islam is the second-largest religion at 13% of the population. Other major religious groups in India are Christians (2.3%), Sikhs (1.9%), Buddhists (0.8%) and Jains (0.4%). People who claimed no religion are officially recorded under 'other' by the census. In 2011, 0.9% of Indians selected the 'No Religion' category.

While the number of Indians living in urban areas has increased over the last two decades, about 67% of people still live in rural areas. In 2011, India had a literacy rate of 74%: 82% for men and 65% for women. The literacy rate varies wildly by state.

Data on ethnicity is not collected by the Indian census, although the CIA world Fact book estimates the population is 72% Indo-Aryan, 25% Dravidian, and 3% Mongoloid and other.

The diversity hence caused by social and economic factors is immense. These factors often contribute to stereotypes and prejudices. A stereotype is an over-generalized belief about a particular category of people. By stereotyping we infer that a person has a whole range of characteristics and abilities that we assume all members of that group have. Stereotypes lead to social categorization, which is one of the reasons for prejudice attitudes (i.e. "us" and "them" mentality) which lead to formation of in-groups and out-groups. Prejudice is a preconceived opinion that is not based on reason or actual experience. We as educated Indians should free ourselves from such harmful stereotypes and prejudices.

16.2.4 Cultural Factors

Culture is defined as people's way of life. It entails how they dress, how they speak, the type of food they eat, the type of festivals they celebrate, the manner in which they worship and their art among many other things.

Indian culture is one of the oldest cultures in the world. India is a land of unity in diversity where people of different sects, caste and religion live together. There are also innumerable languages prevailing in India.

Notes

INTEXT QUESTIONS 16.2

Match the following:

i.	Openness	1.	This trait features characteristics such as imagination and insight.
ii.	Agreeableness	2.	It is characterized by excitability, sociability, talkativeness, assertiveness, and high amounts of emotional expressiveness.
iii.	Extroversion	3.	Standard features of this dimension include high levels of thoughtfulness, good impulse control, and goal-directed behaviors.
iv.	Neuroticism	4.	It is a trait characterized by sadness, moodiness, and emotional instability.
v.	Conscientiousness	5.	This personality dimension includes attributes such as trust, altruism, kindness, affection, and other prosocial behavior.

ACTIVITY

We enjoy with them because they are somehow similar to us such as we both might enjoy playing cricket or we both might enjoy watching movies together, or simply we might enjoy being in each other's company. By now the image of your best friend is definitely there in your mind.

Begin by listing on a paper at least 5 ways in which you are similar to and also at least five ways in which you are different from your best friend. Now analyse each similarity and difference in terms of which factor of diversity it falls in. For example, if you both enjoy mathematics, then this similarity falls under psychological factor.

By the end of this activity you ll be able to understand the meaning of diversity and the factor leading to it. Despite the difference between the two of you, you like each other, thus differences are not bad, and they often attract us to each other.

Notes

16.3 SPECIAL NEEDS ARISING FROM DIVERSITY

Diversity brings with it a lot of challenges. Differences of lifestyles, opinions, backgrounds, attitudes can make it challenging to coexist. Difficulty is faced more by the minority group as compared to the majority group.

Minority is any small group in society that is different from the rest because of their caste, religion, political beliefs or cognitive ability or a person who belongs to such a group.

As stated earlier, diversity often encourages stereotypes and prejudices. And the targets of these prejudices are often the minority group.

Thus, there arises a special need to help build an environment of inclusion in which everyone feels appreciated for their unique characteristics and are therefore comfortable sharing their ideas and other aspects of their true and authentic selves.

Following are five techniques for reducing stereotypical thinking:

- Learning to recognize one’s stereotypical responses to other people, and to generate non-stereotypical alternatives to explain that person’s behavior.
- Remembering or imagining people from stereotyped groups who do not fit the stereotype.
- Paying attention to other things about someone besides the stereotypes of their group–personal things that can help you see them as an individual, not just a group member.
- Imagining what the world looks like through the eyes of a stereotyped person.
- Deliberately seeking opportunities to get to know people from stereotyped groups.
- Special needs in diversity also arises due to cognitive disability and physical disability faced by a segment of the population. As per Census 2011, in India, out of the 121 Cr population, about 2.68 Cr persons are ‘disabled’ which is 2.21% of the total population (Refer to table 16.2)

Population, India 2011			Disabled persons, India 2011		
Persons	Males	Females	Persons	Males	Females
121.08 Cr	62.32 Cr	58.76Cr	2.68 Cr	1.5 Cr	1.18 Cr

Table 16.2 Disabled Populations in India – Census 2011

The Census 2011 revealed that, In India, 20% of the disabled persons are having disability in movement, 19% are with disability in seeing, and another 19 % are with disability in hearing. 8% has multiple disabilities (Refer to figure 16.2)

In an era where 'inclusive development' is being emphasized as the right path towards sustainable development, focused initiatives for the welfare of disabled persons are essential.

Countries differ in conceptualization of disability, identification procedures, educational practices, comprehensiveness of provision, and policy priorities.

In India, Rehabilitation Council of India, Ministry of Social Justice and Empowerment and NHFDC (National Handicapped Finance and development Corporation), aim to economically empower the disabled while discouraging charity.

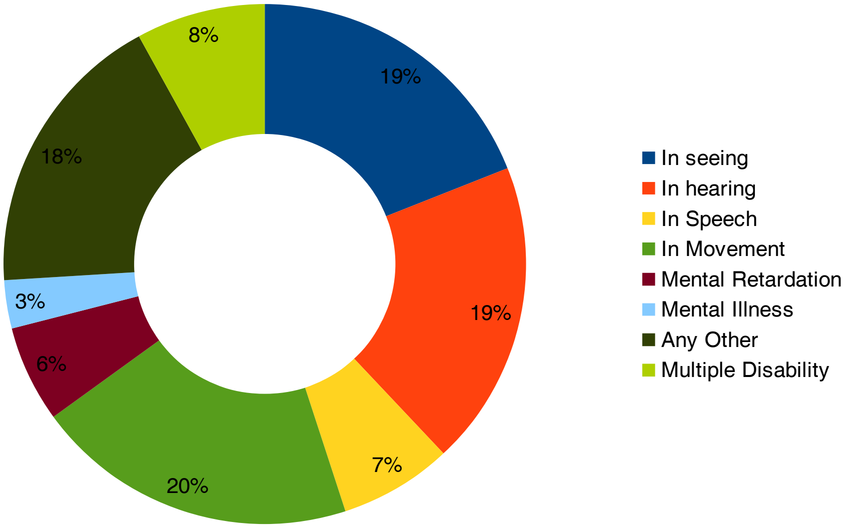


Figure 16.2 Disabled Population by type of disability in India – Census 2011

At personal level as well we should respect diversity created by disability. We should not think of differently challenged people as less competent than us in any way. We often attach stereotypes with them based on misconceptions, past experiences, and the absence of fact. For example, common stereotypes attached mental illnesses are

Notes

that they're dangerous, unstable, and face periods of hospitalization.

Ways in which we can respect the differently-abled people and cater to the special needs arising from such diversity are:

- Pity is not the same as compassion. Whenever you see a person with disability, you should presume they are just as competent as you are in the job they've been assigned. Never assume they aren't capable, or that you need to step in and help.
- Using the correct terminology - Just one word that you use can degrade someone, hurt their feelings, insult them, or even imply that you are discriminating against them. Earlier the label 'Disabled' was used for referring to people with disability, however, now the term 'differently -abled' is used universally. The term disabled takes away their individual identities. Just like we would not want to be called by a characteristic of ours which we are not proud of (such as long nose, short height), similarly people with disabilities do not want their disability to be their name tag.
- See the person – the individual – instead of seeing them as their disability. Maybe they have a great sense of humor. Maybe they're a hard worker. See them for the things they are. They are not defined by their impairment any more than you are defined by the color of your hair.
- Treat differently abled people as you would treat anyone else.
- If you think someone needs assistance, you can offer it. The person may accept it or not. Either way is okay. Don't give your assistance without their permission. That is assuming they can't do something on their own.
- Sometimes people may have impairments that affect the way they speak. If you're having problems understanding what someone says, ask them to repeat what they said. Be honest. Be polite.
- If someone is in a wheelchair, you want to make sure you converse with them at eye level. This may mean pulling up a chair. Don't bend over, kneel, or lean to talk to them. Also, don't lean on the wheelchair as support. If you can't sit down, it's okay to stand. Just look them in the eye.

- If someone has a visual disability, identify yourself and anyone else who is with you. If talking to someone else other than the blind person in a group, make it clear who you are speaking to by addressing them by name.
- Never pat people in wheelchairs on the head or on the shoulders. That is how you would treat kids or pets. Always treat adults as adults.
- To get the attention of a person who has a hearing disability, tap them on the shoulder. Speak slowly and clearly so the person can read your lips. Don't block the view of your mouth. Speak in normal tones. Don't shout.

ACTIVITY

Read the COLOR the word is highlighted in, not the word itself:

Yellow Blue Orange Black Red Green Purple Yellow Red Orange Green Black Blue Red Purple Green Blue Orange

Did you notice that though you can make yourself do it correctly, you have to read much slower than normal. Brain wants to read the actual word.

This is an example of how difficult it is for students with learning disabilities to get through the day. Their brain understands what needs to be done, but they have to struggle to make it come out right.

ACTIVITY

Now let us try the following tasks to understand the plight of differently abled people:

1. Using a blindfold, cover your eyes. Find your way through your house or any familiar surroundings.
2. Without using your preferred hand, tie your shoelace with only one hand.
3. Using a wheelchair or a stick walk through the public. Observe the reactions and stares the general public gives.

DO YOU KNOW

When a person has an intellectual disability, it means that they learn slower. Because they learn more slowly, they don't learn as much as other people might. There are over

Notes

200 known causes for intellectual disability. About one-third of the time, no one knows what caused it. Not everyone with an intellectual disability is alike. One person can have mild problems while another may have severe problems. A person with an intellectual disability may:

- Have difficulty understanding what other people say or mean;
- Have difficulty saying what they mean or how they feel;
- Understanding social cues (for example, if you turn away they may not know this means you don't want to talk to them);
- have difficulty learning and concentrating;
- Have to do things many more times than average before they learn it;
- Act younger than their age;
- Not understand when someone is making fun of them;
- May find it hard to read or write;
- May not understand when someone tells them to do something wrong.

INTEXT QUESTIONS 16.3

State which of the following statements are 'true' and which are 'false

1. One should treat people with disabilities with pity.
2. Mental Retardation is the most common type of disability in India.
3. A more appropriate term to refer to people with disability is 'Differently abled' as compared to 'Disabled'.
4. Stereotypes often lead to discrimination.
5. If someone is in a wheelchair, you should converse with them at eye level.

WHAT YOU HAVE LEARNT

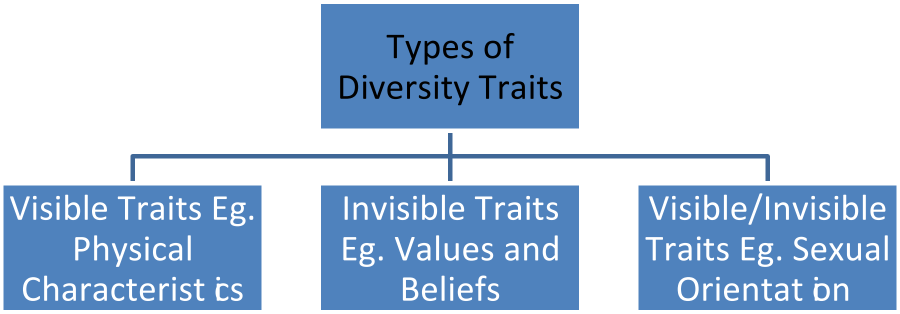


Fig 1. Classification of Diversity Traits

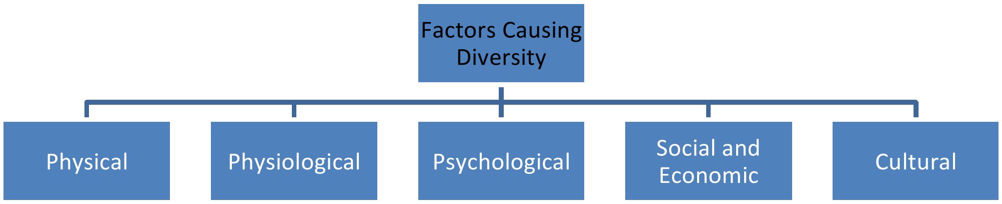


Figure 2. Factors that cause diversity

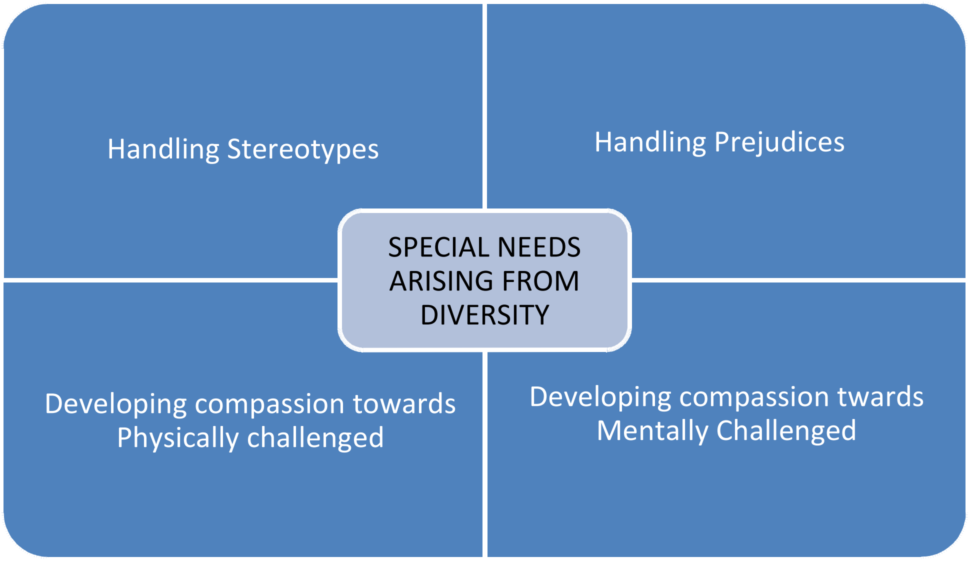


Figure 3. Special needs arising from diversity.

Minority is any small group in society that is different from the rest because of their caste, religion, political beliefs or physical and cognitive abilities. These groups are often targeted.

ANSWERS TO INTEXT QUESTIONS

16.1

1) False	2) True	2) True	2) False	2) True

16.2

(i) 1	(ii) 5	(iii) 2	(iv) 4	(v) 3

16.3

1) False	2) False	2) True	2) True	2) True

TERMINAL QUESTIONS

1) What is Diversity? With the use of examples, explain the classification of diversity trait

2) Explain the psychological factors causing diversity.

3) What are the social and economic factors causing diversity in India?

4) How does diversity create special needs?

5) What are stereotypes?

6) What do you understand by the term OCEAN that describes different types of personalities of individual

7) Explain the physical and physiological factors causing diversity.

8) What are the different ways of reducing stereotypical thinking?

9) Outline different types of diversity traits in which people differ from each other can be classified.

10) How does the social and economic factor impacts the society?

17

SELF AND PERSONALITY

Ram, a student in XI class was staying in a hostel. He received a telephone from his father to come home immediately. His home was in a nearby city. He did not have enough money in hand so he was wondering what to do! His roommate asked him what the problem was? When Ram told him the situation, he quickly took out some money from his pocket and talked to another friend. He arranged enough money and asked Ram to go to his home. Ram thanked him and promised to pay back the money when he returned.

We often find ourselves in such situations where we need to make choices, and decisions and we wonder, "What should I do? Can I, do it? Why I am not confident? Why do I make so many errors? I do not have an impressive personality". Many such questions and doubts come to our mind whenever we must deal with difficult situations. Some of us can deal with such situations easily. Some do not even think they just do something and wonder later, why did I do it? Now I am in trouble! Such different kinds of behaviours have been explained by psychologists with the help of two concepts, personality, and Self. What does this Self mean, and how it prompts us to act in different situations? What is the relationship of Self with personality, and how it influences the behaviour of a person? How can we develop an effective personality or a strong Self? In this lesson we will learn all about Self and personality, and how it develops and controls our behaviour. We will also learn a few theories of personality and the techniques of assessing personality.

LEARNING OUTCOMES

After studying this lesson, learner :

- defines Self, self-concept, self-esteem, and self-efficacy;
- describes the meaning of personality;
- discusses type and trait, psychoanalytic and humanistic theories of personality;
- explains Self report measures and projective techniques (Word Association Test & TAT);
- becomes aware of one's own self in different contexts; and
- uses different techniques of assessing personality.

17.1 CONCEPT OF SELF

We describe ourselves in many ways such as, 'I am tall' or 'I can learn fast' or 'I am strong' etc. There are many such ways of describing ourselves. All these descriptions together define our Self. We develop an understanding of the Self during our interaction with other individuals, as well as with the physical and social environment. Based on these interactions and the feedback from others, we form opinions about our own Self. We define ourselves in many ways in terms of our physical, academic, social, and emotional qualities as well as our affiliations and relationships.

A small child has no concept of Self. As a child grows, the Self develops out of his/her experiences and interactions with the physical and socio-cultural environment within and outside the family. In the beginning, the self-descriptions are simple like 'this is my hand' this is my mother, or 'my family or may include our physical characteristics. Gradually, as one goes to school, and mixes with friends, many self-descriptions are accumulated. These self-descriptions do not exist separately. These are linked with each other, for example, the child believes that s/he is good-looking, s/he can make others laugh and others pay attention to him/her, and s/he is smart as a result of her parents like her. All these self-descriptions emerge around the different domains of development like physical, academic social, emotional, and spiritual. These are linked and if the description in any one domain is shaken the others are also weakened. However, there are certain core concepts which lie at the heart of the Self of the person, while other peripheral concepts may not be so crucial. The self-concept is constituted by those core concepts. If the core concepts are challenged the individual is threatened and disturbed.If you challenge peripheral concepts, it does not cause an

emotional threat. Now you know why some people react to some comments so strongly. For instance, the fact that you are the son or daughter of so and so or your religion, or your age, etc., all these are core concepts. The colour you like for your dresses or the games you play or the political party you support, all these could be peripheral self-descriptions.

The self-concept constituted by the core concepts is not neutral. It is either positive or negative. Accordingly, individuals think positively or negatively about themselves. For example, a child having a negative physical self-concept may not expect people to like him/her and accordingly may not behave confidently in social situations. This in turn makes people not take notice of him/her, further strengthening the self-concept.Thus, it is not easy to change either the positive or negative self-concept. The individual may not think about all the aspects of self as positive or negative. A person with a negative physical self-concept may have a positive academic self-concept. Also, all individuals with a positive self-concept may not be the same. Some may have high degrees of positivity in some areas, while others may have positive self-concepts in other areas.

17.1.1 Real-Self Vs. Ideal-Self

Self-concept does not always coincide with reality. The experiences of a child, is responsible for development of his/her Self. For example, a child could not complete his work due to some reason, next day teacher while asking for homework may say you are careless. Next day by chance mother or someone else also says the same thing. The child unconsciously accepts this, and 'I am careless' may become a part of his/her self-description. The child may be a smart child but receiving such negative feedback may bring down the self-confidence and make him/her a careless person. Similarly, parents love can seem conditional, example they may insist their child pursues science and if he/she does then only will that make them happy. The child makes efforts to do well in science, but he/she doesn't like it, and isn't good at science. The fruitless efforts to do well in science give rise to self-description like 'I am not intelligent' and 'my parents are not happy with me'. The real self was intelligent but being forced to pursue science, the self-concept moved away from the real self to a distorted self-concept. When the real self and ideal self-pull a person in different directions the result is negative self-concept and poor self-esteem. What about you? Just think why you choose different options!

17.1.2. Self-Esteem And Self-Efficacy

The overall evaluation of all aspects of Self like, physical, emotional, social, academic,

etc. is called self-esteem. Self-esteem is the sum of all the positive evaluations. An individual with high self-esteem would think of him/herself to be a good person and would behave accordingly. Higher self-esteem may lead to greater efforts to behave in positive ways and avoid negative behavior. (High self- esteem may not always lead to positive behavior). Self-esteem and self-concept gradually develop right from childhood. The way child is treated by the family, school, peers and friends determines whether different aspects of him/her would develop in a positive or negative direction. The self has both positive and negative components, but the overall self would be either negative or positive, but it could vary in degrees of positivity or negativity. If the child's self-esteem is low or negative he/she would develop doubts about his or her ability to perform various tasks successfully.

There is another related concept known as self-efficacy. Self-efficacy is the expectation of a person about his or her capability to perform different types of tasks successfully. Self-efficacy helps a person to predict his/her success or failure in various tasks. A person with high self-efficacy will take up challenges and spend time and effort on certain selected tasks. It depends on the task, and the individuals' experiences with those or similar tasks. For example, a girl may have high self-efficacy,(self-esteem) but if her experience of cooking has been bad, her self-efficacy related to those tasks would be low. But a boy having pleasant experiences of cooking, even if low in self-esteem would express high self-efficacy on related tasks. Self-efficacy is related to self-esteem. The higher the self-esteem, the chances are higher would be self-efficacy. Observation of successful performance of people who are like us increases our own self-efficacy beliefs. Mastery of tasks and genuine praise from parents and other important persons also increase self-efficacy while stress and failure decreases it. It is therefore important that children seek positive role-models and stay stress free. This is possible when they take responsibility for themselves and stay disciplined.

ACTIVITY

Describe yourself in five positive ways in the space given below. Think about each one of these qualities and write next to it why you think so. What made you realize this?

....

....

....

....

17.1.2. Development of Self

The concept of self develops right from childhood. When parents and care givers create pleasant home environment, children develop positive attitudes about themselves. Children observe themselves across situations and develop opinions about themselves. Not only parents, even siblings and friends comments and opinions affect self-concept. During early childhood, the Self revolves around physical characteristics. As the cognitive capabilities and feelings develop with age, the children compare themselves with others. The comparison of Self adds adjectives to self-descriptions like, "I am quick in learning". In school, the statements and opinions expressed by teachers, classmates, and peers also affect the development of the Self. The child gradually develops a whole lot of concepts about their physical, academic, emotional, and social qualities. Each one of these concepts is accompanied by positive or negative adjectives. As these self-concepts are emerging, the child develops positive or negative feelings about his or herself. The overall feelings are the self-esteem of the child.

The development of self-concept is influenced by the positive and negative interactions taking place at home, in the family, among peers and in neighborhoods. Culture is also an important factor in development of self-concept. The experiences that occur to the child determine the direction of self-concept. If you think of yourself as smart or good natured it is probably because people around told you that you are smart or good natured.

ACTIVITY

Discuss with your friends what they think about themselves. Also question them why and how they came to think of themselves that way.

INTEXT QUESTIONS 17.1

Fill in the blanks:

i. Self develops because of child's ....with others.

ii. These concepts of self are either .... or ....

iii. The core concept is called ....

iv. Self-esteem is evaluation of self as ....or ....

v. Self-efficacy is related to ....

vi. Self-concept develops from...

vii. Feedback from ...., ...and ....determines self-concept.

viii. ....helps in development of positive self-concept.

ix. Even your .... and .... affect your self-concept.

Notes

17.2 PERSONALITY

We learned about the Self in the previous section. The word we frequently use to describe others is personality. It is derived from the Latin word persona which means mask people wore during theatrical performances. But it does not mean that our behaviour is an act. It is not easy to put on an act all the time. Infact, it is reverse because people behave in consistent ways across different situations. Even if we want to behave differently in different situations, it would be difficult. When we talk about someone's personality, we are referring to the visible characteristics of others to which we are either attracted or are not attracted i.e., the way they appear. These are physical aspects of personality. But personality includes other aspects also.

Psychologically, personality is our unique ways of behaving in different situations such as, excited, joyful, warm, or friendly, etc. You may have observed that some people are not easily depressed by the difficult situations for a long time and remain happy. There are others who respond to most situations with seriousness and are not easy to please. These are the personality characteristics which are stable across situations. Though people do behave out of character sometimes. Remember the times you say, 'Oh What has happened to him/her? She/he is behaving so differently' Rarely, an individual may respond to a situation very differently than his/her usual style. However, personality can be described as ways wherein people behave consistently in most of the situations. There are two important characteristics uniqueness and consistency. But let us not forget that people do behave inconsistent with their personality in certain situations. It is due to this small proportion of flexibility that the change in personality is possible. This is where role of psychologists' and individual's own efforts become important. This is the dynamic nature of personality. Thus, we arrive at the definition of personality as the unique, consistent, and dynamic organization of physical and psychological characteristics of an individual.

The uniqueness of personality means that none of us are alike. Even two persons who are aggressive are not same in personality. There are individual differences among all of us. Each one is unique. Now you know that all of us are different. Some are very

emotional, some aggressive and some are quiet. Even those who do seem good or have effective personalities could be very different from each other. Psychologists study personalities to understand how we develop in such different ways. They also would like to predict the behaviour of different kinds of personalities.

Thus, knowing the personalityof people enables us to predict their behaviour in different situations. The purpose of studying personality is to understand how it develops in a certain way. This knowledge would help us plan experiences that would facilitate change in a positive direction. But remember it is not easy to bring about this change. In the next section we will learn about different ways of studying personality as proposed by different theories.

ACTIVITY

Observe yourself and other people around you carefully. Make notes of the kinds of errors you make and the appropriate behaviour you engage in. Is behaviour consistent across situations?

INTEXT QUESTIONS 17.2

i. Explain the meaning of personality.

ii. Why do psychologists study personality?

iii. Fill in the blanks:

a. Personality is...................,.................... and consistent.

b. Knowing personality helps us to plan ....experiences for individuals.

17.3 THEORIES OF PERSONALITY

Now you know the meaning and definition of personality. There are many ways in which psychologists have explained personality. We will learn in this section how these approaches or theories explain personality. These theories suggest ways of assessment of the structure of personality, motivation or energy sources, and the study of development of differences in personality. Here five theories namely, type, trait, psychoanalytic, humanistic, learning and socio-cognitive theories of personalities have been discussed, though there are others too!

17.3.1 TypeTheories

The 'type approach is historical, and it categorizes people into different types according to some specific behaviors. The Greek physician Hippocrates suggested four types of people-based on the dominance of fluid in the body. According to him, sanguine or optimistic people have bile produced by the spleen. The choleric irritable or aggressive have black bile, and the phlegmatic or calm have blood produced by the liver, finally the melancholic or depressed have phlegm produced by the lungs.

There is Kretschmer's types classification according to physique and character. According to him there are four types of personality: the Pyknic type with short and round body, athletic type with slender or slim body, athletic or strong types, and the dysplastic or unproportionate type. There is Sheldon's classification of three types: endomorphs with soft, fat, and round bodies, ectomorphs with tall, thin, and flat chested, and mesomorphs with well-built bodies.

In ancient India too, the earliest very well-known physician Charak, based on humours of the body viz. vata, pitta, and kapha suggested the nature of personality accordingly. Though these are not pure types, tridoshas exist in people in different combinations. Accordingly, they have combined characteristics. Those with excessive vata are generally energetic, muscular, open-minded, alert and learn easily. Those with excessive Pitta are generally intelligent, fastidious, strong built, competitive. Those with excessive kapha are generally steady, patient, thoughtful and supportive.

Another worth mentioning personality theory is by Jung. According to Jung there are two types of people, Introverts and Extroverts. Introverts are shy, withdrawn, unable to adjust in social situations. The Extroverts are outgoing, friendly, talkative, and social in nature. However, we know that there are few who could be categorized into either of the above categories. The others are called Ambiverts. In the next section we will introduce other relatively recent theories.

17.3.2 Trait theory

Traits are the observable behavioural tendencies of people that are consistent across situations. These are like the adjectives we use to describe the behaviour of people, for example, traits like shyness, insecurity, outgoing, confidence, aggressiveness etc. Traits are relatively permanent and stable characteristics. The personality is constituted by several traits. These are the building blocks of personality. There are several trait theories. Allport's and Cattell's theories are two of the important theories. Let's look at both the theories.

Allport's theory

The structure and dynamics of personality: This theory distinguishes between two types of traits - one that are observable behaviours and the other that are underlying internal tendencies that produce the behaviours. The shyness comes from underlying feelings of lack of competence, confidence, and negative expectations. Thus, traits are the result of internal processes of thinking, feeling and behavioural tendencies. He has distinguished three kind of traits- the cardinal, central and secondary. According to him the cardinal traits are the ones that become the defining feature of a person's personality. i.e. control the person's behaviour, for example hardworking, punctual or loving, helpful etc. For example, Mother Theresa was so compassionate that she worked with leprosy patients without concern for her own self. The central traits are the general traits that define the person, but these are not as controlling as cardinal traits (Example of central traits could be added).The secondary traits are those which are not as important. These are casual likes and dislikes. According to Allport, the traits are important, but the situations are also important and influence the expression of traits. Gandhiji was just like others till he met with an unusual situation in South Africa which made him a non-violent fearless leader.

People engage in different activities wherein they spend their energy for tasks which motivates them. The energies are channelized in those activities which lead to success. These activities become motivating, the motives become identified with their personality and become self-sustaining. These are the cardinal traits that control the personality of a person as explained through the example of Gandhiji and Mother Teresa.

Development of personality: A child at the time of birth has unique genetic characteristics which slowly develop into different types of traits. The maturation, imitation and learning bring about differentiation of traits.Those traits become prominent which bring satisfaction. These traits gradually fall into a congruent behavioural pattern which lies at the center of all behaviours.. An important concept is that of 'functional autonomy'. The traits or action tendencies which develop to satisfy a need gradually become autonomous. The adults have consistencies in their behaviour which is the result of autonomy of various drives.

Cattell's Trait Theory

This theory slightly differs from the Allports' theory. It assumes that there are central traits that each person possesses. But these traits are present in different individuals in varying degrees. There are 16 central traits which were identified from a list of 171 adjectives. Using a statistical procedure, a personality test was developed using these

adjectives. The test is known as 16PF questionnaire. The test yields 16 traits that are the primary factors. Besides these, there are other traits also that are acquired because of interaction of these traits. These are called secondary traits.

INTEXT QUESTIONS 17.3

1. Mention the different theories of personality.
2. Name at least four type theories.
3. What are the different types of personality suggested by Charak?
4. What are the different types of traits in Allport's theory?
5. What are the two types of traits in Cattell's theory of personality.
6. Fill in the blanks:
   i. Sheldon identified the …………, ………, and ……………...................
   ii. Jung identified two important types of people .... and ....
   iii. The personality test based on the Cattell's Personality Theory is..............
   iv. In Allport's theory cardinal traits are the ------------ feature of personality.

17.4 PSYCHODYNAMIC THEORY

Sigmund Freud a physician developed the first theory of personality. During the treatment of paralysis, numbness, fainting, particularly women, he found that these patients were not suffering from any physiological problem. According to him these people were suffering from internal conflict among their various desires and expectations. The conflict is not all conscious. Psychodynamic refers to this pull of psychological forces in different directions, which causes mental health problems. The theory is described under the following heads: structure and development.

17.4.1 Structure of personality

In this theory the personality is made up of three parts: the: id, ego, and superego. Id includes all desires i.e., all bodily needs, sexual desires, and aggressive impulses. Id operates on pleasure principle; it seeks pleasure and satisfaction of needs immediately. Ego is the part that operates on reality principle. It keeps the id in control and allows

satisfaction of needs only under appropriate circumstances. For example, you feel hungry during your class. A part of you wants to eat immediately but ego reminds you of the punishment from teacher and makes you wait till recess. The ego strikes a balance between the desires and outside conditions. Ego is partly conscious not all the parts of ego are conscious. Third part of personality is superego. It is concerned with moral aspect of our actions. As id wants to satisfy some need, superego lays down conditions. It is different from ego. Let's look at the example you are at home, you want money,there is money in the dad's almirah.The superego warns, not because of any punishment but your parents have told that it is not right to take money without permission. Superego contains all the teachings from parents, from the school, and the teachers, and society. These morals are lodged in superego and give direction to our behaviour. The conscious and unconscious conflict between the three parts of our personality id, ego, and superego determines our mental health.

Most of the conflicts are unconscious. The consciousness forms one part of personality. The conscious thoughts and feelings are a very small part of the personality. Preconscious another part which contains a large portion of desires, memories, and conflicts which are unconscious, but these become available to the consciousness, if the person pays attention. However, most of these remain unconscious. The largest part of human personality is unconscious which is formed by the threatening desires, motives, and conflicts. These experiences were once conscious, but these were actively pushed into unconscious. If such experiences come to conscious, they give rise to anxiety, so such desires, motives and feelings are continuously pushed into unconscious part of personality. The continuous struggle among the id, ego, and superego determines the development of personality.

17.4.2 Development of personality

The prime motive which drives people is libido or pleasure seeking: The energy or libido is concentrated in different parts of the body at different stages. During developmental stages the child derives pleasure from different parts of the body also called erogenous zones. As the child grows she/he also realizes that there are limitations on pleasure seeking. The first stage of development is the oral stage.

Oral stage: During this stage (about first 18 months)total fixation is on the mouth(the infant primary focus is on the mouth).The child seeks pleasure i.e., food and nurturance through mouth. The baby sucks at things and puts things in the mouth. If for some reason, there is lack of satisfaction and pleasure at this stage. The person's libido becomes fixated here and she/he becomes dependent on others and craves for love

and nurturance. This theme may continue throughout life.

Anal stage: This stage (2-3 years) is about the time when pleasure seeking is fixated (concentrated) around anal region. The child is toilet trained by the parents. If parents are too strict about training or the child resists discipline. She/he gets fixated at this stage. The behaviour of such a person is either too fussy with neatness, stubborn or excessively undisciplined and disorderly.

Phallic stage: This stage (about 4-5 years) is centered around genitals. The children become aware of their sexuality, and they understand the intimacy between their parents. The attraction develops towards the parent of opposite gender which is called Oedipus complex (Oedipus was a Greek character who killed his father to marry his mother). Those who can resolve this fixation and develop the attitudes, values, and morals of the parents of same gender or significant others in their life develop in a healthy manner. This also leads to development of superego i.e., the moral sanctions.

Next two stages are: Latency (7-11 years) and Genital stage (12 year onwards). During the latency stage the children learn to express their sexuality in desirable ways by imitating their parents. The libidinal energy is channelized in constructive ways to schooling, games and developing other talents. The sexuality is not visible in this period.

The genital stage is maturation of the sexuality and its expression physically and psychologically in socially acceptable ways. The satisfaction of sexual urges becomes the main goal. Those developing healthy would be capable of hard work, take responsibility for working towards having a job and a future with own family. The personality of the person as evolving during earlier periods gets integrated now with adult attitudes. For example, if they were dependent, they would still be dependent on their parents for help and show less enterprise; while those that were independent and identified with the parent would be self-directed.

Defense mechanisms

As stated earlier in the previous section, during the early stages of the development of the individual, the libidinal energy gets fixated in certain regions of the body. The energy is demanded by all the id, ego, and superego. This means the impulses of the id such as, feelings of anger, hate or other desires demand expression. Similarly, the superego or the parental (moral) commands rules and discipline also seek expression. The opposing demands of these cause anxiety, however these are balanced by the ego. The ego devises strategies to divert energy to safe activities to protect itself from the demands of the id. The needs of the individuals' id are not satisfied, but energy is channelized partially to hide unwanted urges of id in the unconscious. The rest of the

energy is diverted to other activities.These strategies employed by ego are called defense mechanisms. Some of the important ones are given below:

Displacement- diverting attention from the anxiety causing urges to acceptable activities.

Repression- forcefully suppressing the anxiety causing memories or events.

Denial-denial of existence of anxiety producing events. (Refusing to accept the existence of anxiety producing events)

Projection- unacceptable impulses are denied entry into conscious and are projected (displaced) on to others.

Rationalization- using an excuse to explain anxiety producing or negative experience.

Reaction-formation- the socially unacceptable experiences are unconsciously turned into opposite type of behaviour.

Regression- stressed people behave like a child and regress (make a return) to previous stage of development.

(It would be good to provide examples for each of these defense mechanisms for students)

INTEXT QUESTIONS 17.4

i. Psychodynamic theory was first developed by..

ii. Three main parts of the personality given in psychodynamic theory are ...., ...and ....

iii. The parents' teaching and morals are contained in ....

iv. .... is the prime motive that drives people according to psychodynamic theory of Freud.

v. Conflicts occur because all three parts of personality try to control ....

vi. List all the stages of development given in the Freud's theory of personality.

17.5 NEO-FREUDIANS

Apart from Freud there were severalother psychologists who contributed to the psychoanalytical theory. Some prominent ones were Carl Jung, Alfred Adler, Erich Fromm, Karen Horney, Harry Stack Sullivan, and Erik Ericson. Freud conceptualized unconsciousness consisting of the personal childhood memories. Jung added an important conceptualization to the unconscious part of personality, The collective

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consciousness unconscious. According to him, the Collective Consciousness unconscious is inherited. This component is universal, and present in all individuals. The collective unconscious is made up of 'Archetypes'. Archetypes consist of the images and behavior patterns that are associated with conception of mother, God, spirituality, sex, etc. These are inherited from our ancestors. Another interesting concept that Jung proposed is the 'Persona' or the Mask. Itis the outward personality that individual adopts, to adjust his/her behaviour to the demands of the society. It is the public personality as different from the inner or private personality.Jung also distinguished two major personality orientations, the introversion and extraversion.Introverts are more inward directed to their subjective world of experiences, while the extraverts are more outwards directed to the objective world. Thus, these two types of personality orientations are present in all individuals but one aspect is always more dominant than the other in a person.

Yet another psychoanalytical theorist was Alfred Adler. Adler is known for his concepts of individuals strivings for superiority, social interest, lifestyle, and creative self. Adler believed that all individuals suffer from feelings of inferiority, as a result they try to overcome inferiority by striving for superiority. He also believed that the human beings are inspired by social interests such as justice, cooperation, common good and having social relationships. His concept of lifestyle is the unique way a person develops, his typical motivations, and areas of strivings. An important difference that he brought was importance of training and support in developing one's lifestyle. His conception of creative self is the product of heredity and the experiences, and it's the creative self which provides a direction to the entire personality. Adler's contributions credited environment and outer support as important determinants of personality.

Erich Fromm is known for his focus on social relationships. Human beings are trying to avoid loneliness and acquire a unique personal identity.His belief was that human beings are trying to develop healthy relationships with others but depending on the social environment, individuals' social character evolves. Erikson proposed that the individual passes through six stages of psycho-social stages of development. These stages of development, if mastered successfully the individual develops as a healthy adult, else identity crisis occurs. These stages are concerned with development of toilet control, skills for social interaction, responsibility, hardwork, etc.

17.6 HUMANISTIC THEORY

This theory is based on the fact that the subjective experience of situations is different from the reality. Subjective experience means how we see a situation,for example the father is scolding the child for making noise, but the child feels he is still angry with him/

her for not doing well in the examination. External situation here refersto the fact that the child was making noise and shouting. What the child is feeling, is the subjective reality. All of us believe that our subjective experience is real. Two humanistic theorists Rogers and Maslow had focused on the capability of human beings to become what they want, unlike psychoanalysts who believe that the personal development is decided during childhood.

17.5.1 Roger's theory

The main assumption of the theory is that all behaviour is the result of the subjective perception of reality rather than reality. This reality is not easy to perceive. The individuals have limited perception. They cannot process all aspects of the situation. Always, there is a gap between perception and reality. The other important assumption of the theory is that all individuals are capable of self-actualization, which means realization of a person's full potential.

17.5.2 Structure of Personality

There are a few concepts in the theory. The 'organism'is the experiencing being. At birth there is no self, only experiencing organism or the child. The child at birth has no self. The growing child slowly becomes conscious of himself/herself, and develops a 'Self'. Gradually the self-concept emerges. The self-concept develops out of the feedback given by the significant people in the life of the individual. Parents and other significant persons make the love and care conditional. As a result, the child develops positive self-concept if s/he fulfills the conditions laid down. Otherwise, the self develops in a negative direction away from the real self. The Self and self-concept both these terms were discussed earlier in the beginning of the lesson. This self-concept influences the way development will take place. The individual wants to be the 'ideal-self' i.e., the self they aspire to be, as per their own experiences of success or as per the demands of the significant people in their lives.

Development of the personality

The growing child needs care, love and regard from parents and other significant adults. But regard or care from parents is conditional on fulfillment of their demands. Conditional regard takes them away from real self. As a result, discrepancy or distancing occurs between real self and the ideal self, which has been termed as incongruence in the personality. The greater the discrepancy more miserable the person is. The development of personality demands that there is congruence between real self and ideal self-i.e., both are closer to each other. Hence Roger placed emphasis on

unconditional positive regard, so that the child feels comfortable and his/her energies are invested in activities of his/her choice. An example of a maladjusted personality is a child who is low achieving, and parents put pressure on him to score high so that he could study science. Since the child is not doing well, he is not allowed to play or do other things she/he likes doing. The child will feel helpless and miserable;it may lead to having low self -esteem.

The family and important others may have influenced the development during early stages. But according to Roger's theory the individual has a will and independence to choose positivity and development, rather than negativity and the tendency to blame. The following are the qualities that help in growth-

- Acute awareness of the ongoing experience or quality of being here and now.
- Acceptance of the experiences rather than being defensive.
- Listening to the inner voice.
- Taking responsibility for one's successes and failures.

17.6.3 Abraham Maslow's theory of personality

This theory of personality just like Rogers, believed in the strong need in the individual to grow and develop. This means that the human beings have power in them to realize the potential that they are born with. But the theory also proposes that the basic needs of the individual must be fulfilled. These needs are need for food, safety, love, and self-esteem. These needs are hierarchically important for the individual (FIG 6.3). That means the first three basic needs must be fulfilled before before they progress to the other higher needs.

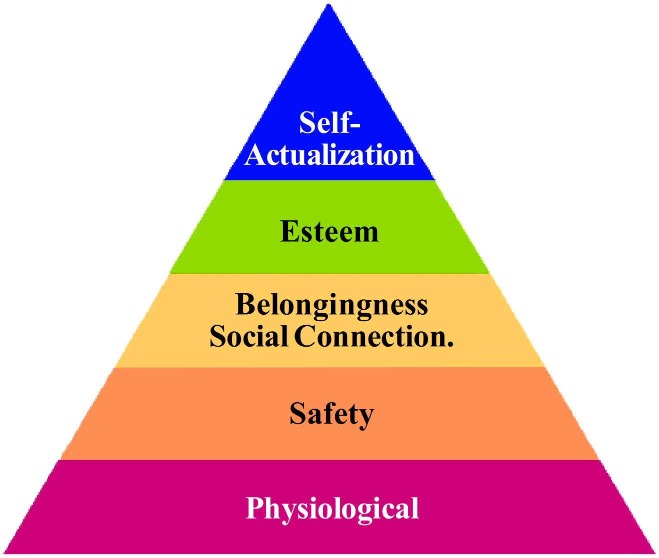

Figure 17.1: Maslow Need Hierarchy

In the above pyramid, the basic needs are depicted at the base. These are physiological needs like, the need for air, water, food, sleep, etc. these needs must be fulfilled only then people are motivated to seek fulfillment of other higher order needs viz. the need for safety and love etc. If physiological needs are not satisfied, the person will not

move on to the next level, i.e. the person will not be motivated for safety. Similarly, when safety needs are satisfied the person will be motivated to satisfy the needs of love, affection, and belongingness. When all these needs are satisfied, the person become motivated to fulfil the needs of self-esteem and achievement of one's potential. According to Maslow, if the lower order needs are not met, the person feels dissatisfied. The higher needs are felt for growth and development when basic needs are satisfied. Those individuals who are motivated by the higher order needs are not necessarily dissatisfied; rather they become more self-accepting and accepting of the societal requirements as well. These people can rise above the routine and are spontaneous and empowered.

INTEXT QUESTIONS 17.5

Fill in the blanks:

1. i. The common component of Roger's and Maslow's theory is that humans can become what they..................................

   ii. The two most important foundations of Rogers theory are role of subjective- .... and ....to develop.

   iii. The main structures of personality in Roger's theory are...................... and ....

   iv. .... self is what you want to be.

   v. .... self is what you really are.

   vi. .... is an evaluation of various aspects of your personality.

   vii. Development is in a positive direction when .... and ....are congruent.

17.7 LEARNING THEORIES OF PERSONALITY

Skinner was one of the prominent theorists to present the learning theory perspective. In learning theory, behavior is understood as a response to a stimulus. The response is linked to the stimulus known as S-R connections. There are two kinds of responses- one those genetically embedded in the individuals' reflexes and the others are learned during development. Several such series of stimulus-response connections may lead to complex behaviours. There are two kinds of response learning, first is the operant

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response (instrumental conditioning) which leads to a reward(this you must have read in the chapter on learning). The second is the conditioned response (classical conditioning) which is evoked by a conditioned stimulus.The theory is described below

Structure of personality

The personality is formed by learned behaviours. Learned behaviours are those which are reinforced or rewarded. The stimulus-response connections which are followed by rewards are strengthened. For example, a girl who is rewarded or appreciated for her cooking skills would be increasingly interested in cooking. Another girl who is appreciated for her athletic activities would be more and more involved in those kinds of skills. Even if the two girls could equally excel in academics due to the appreciation received in a particular area, their personality is shaped accordingly. The inclination to seek rewards is built up in the individual. In this theory the role of genetics and environment is prominent but the individuals' own inner thoughts and feelings are not given any importance.

Development of personality

A newborn child has hereditary characteristics, primary drives, and reflex actions only. The S-R connections which are followed by reinforcements are learned. The different behavioral tendencies emerge later because of interactions with the environment. The infants differentiate gradually in physical, emotional, and communication patterns. Learning, imitation, maturation, and integration lead to greater differentiation of traits. The action tendencies which had developed earlier to satisfy a need gradually become autonomous i.e., even in the absence of reward the behavior continues. This autonomy of the behavior of the various drives brings about consistency in the behavior. For example, one may eat a particular food or dish to satisfy hunger but later the taste and the circumstances under which it is eaten also get connected. The individual is motivated to eat the same dish not only to satisfy hunger but it is secondary motivation to seek the same environment and stimuli. Thus, the social context of learning -the role of family, language, and conflict experienced in early stages also are important determinants of behaviour.

Albert Bandura known as a social-cognitive learning theorist suggested the role of observation and attention in learning. (You have learned about perception and attention in the previous chapter). He highlighted the role of modeling, our own cognitions or thoughts, and social context in learning. According to him, people learn by seeing others do certain actions. For example, when you see others begin preparation for an examination, you too start thinking about your own studies and preparation. The role

of self-efficacy or the beliefs about own ability to successfully perform certain actions also plays an important role in learning. Those students who believe they will be able to get through the exams put in hard work, whereas those who think they will not pass, stay distracted. The third aspect which is a social context or environmental support is also considered important. The expectations and support of the parents or teachers facilitate learning and performance.

INTEXT QUESTIONS 17.7

i. The learning theorists believe that all behavior is due to the formation of ....and ....connections.

ii. Personality consists of ....

iii. The learning of a behaviour is strengthened by.................................

iv. In addition to learning …………,………………..,and ……….play an important part in development of personality

v. Social cognitive theory was developed by.................................

17.8 ASSESSMENT OF PERSONALITY

The common impression about psychologists is that they can look at people and tell their personality. But that is not true, the psychologists use psychological tests, self-report inventories and surveys for assessment of personality in an objective manner. These inventories/ questionnaires include several direct questions about a person's behaviour in different situations or the traits or qualities. These tests are objective measures as they produce scores which are reliable i.e., the score of an individual is similar on different occasions.Another characteristic of these tests is their validity i.e. the extent to which the score on these tests assesses what these tests are supposed to assess.Thus, the quality of a test is decided based on its reliability and validity.

17.8.1 Self-Report Inventories

These are measures which include questions about the persons' own qualities which are to be answered by the person him/herself. These questions are related to behaviours, attitudes, beliefs, and feelings in different situations. The person taking test is asked to rate each item with respect to him/herself. The ratings have to be given on traits like aggressiveness, shyness, seriousness,etc.in various situations. People must answer on

Notes

a rating scale of '1to 5', if the trait or quality mentioned in the question/item describes them. The problem with these measures is that people are not very accurate in their judgement and in rating about themselves. The second problem is the 'social desirability' of presenting oneself in positive light; so mostly people give high ratings to themselves on desirable qualities. There is also a tendency among some people to mark themselves in the middle range rather than think, weigh, and then give accurate rating to oneself.

Among the standardized inventories there are two prominent ones Minnesota Multiphasic Personality Inventory (MMPI) which is used for identification of psychological disorders. The 2008 version renamed as MMPI-2-RF contains 338 items. The earlier version named MMPI-2 contained 567 items. There are 10 sub scales: Hypochondria, Depression, Hysteria, Psychopathic deviate, Masculinity/ Femininity, Paranoia, Psychasthenia, Schizophrenia, Hypomania, Social introversion. The questionnaire includes items that reveal whether people are distorting answers deliberately. The test was meant for clinical purpose, but it is used as a personality inventory widely. The previous scale has been adopted by scholars in many different parts of the world, including India.

The other popular scale is the Cattell's 16 PF questionnaire which measures personality qualities like, Emotional engagement, Emotional Stability, Liveliness, socially secure, Vigilance, Openness, Openness to change, Perfectionism, Reasoning ability, Dominance, Rule aware, Sensitivity, Abstractness, Uncertainty, Independence, Tension. It is used with children, adolescents, and adults. It is used for assessment of personality for counselling related to academic, social,emotional as well as in clinical diagnosis.

17.8.2 Projective Techniques

These are psychological tests which are based on the psychodynamic theory. These tests make use of the concept of unconscious projection, of own unacceptable anxiety causing thoughts and feelings on to others. The tests use unclear or vague pictures, inkblots and photographs which are presented to people with questions as to what they would see in them. The persons unconscious thoughts and feelings are identified from their responses. One of the earliest projective tests is word association, which is described below.

Word Association Test

Word association test first used by Galton and was later used by Jung. The test is a clinical diagnostic tool, though it is used along with other projective techniques. It uses hundred stimulus words to be presented to the person and asking him/her to say the

first word that comes to their mind as quickly as possible.These words are neutral. The time taken by the person to give the word in response to stimulus word is noted. The answers are recorded. These records provide clues to the personality of the person. It is also used to identify progress in therapy. The responses that are normal are known, and the responses that deviate from these indicate the nature of problem. Long reaction time, feelings accompanying the response, and inability to give response indicate the problem, and the efforts to block the normal responses.

Thematic Apperception Test

This is another projective technique. It was first developed by Murray and Morgan in 1935. It consists of a series of cards which have human figures depicted in different settings vaguely. Some cards have only one, whileothershave two or more. These cards are presented to the person one by one. S/he is asked to tell a story involving these characters with four questions: what is happening, what lead to this situation, what are these characters thinking, and last what will happen.There are 30 cards, out of which some are appropriate for adult men and women, while others are for girls and boys. The test is done in a quiet setting without any disturbance. The cards are shown to the subject one by one. Based on the individuals' responses the personality is judged (assessed).The judgement(assessment)of the personality is based on the content of the story, the character of the people and the feelings displayed by them. The conflicts and the inner desires and emotions are reflected in these stories.

ACTIVITY

Think about five strengths of yourself. Write them down. Now check with others your family and friends. What do they think about your five strengths! Do they correspond?

INTEXT QUESTIONS 17.8

i. The two important characteristics of personality tests are .... and ....

ii. The problem with self-report inventories is about --------, ------- and accuracy of ....

iii. Self-report inventories include questions about own ....

iv. MMPI contains .... items and ....scales.

v. Cattell's 16 PF test contains 16 ....

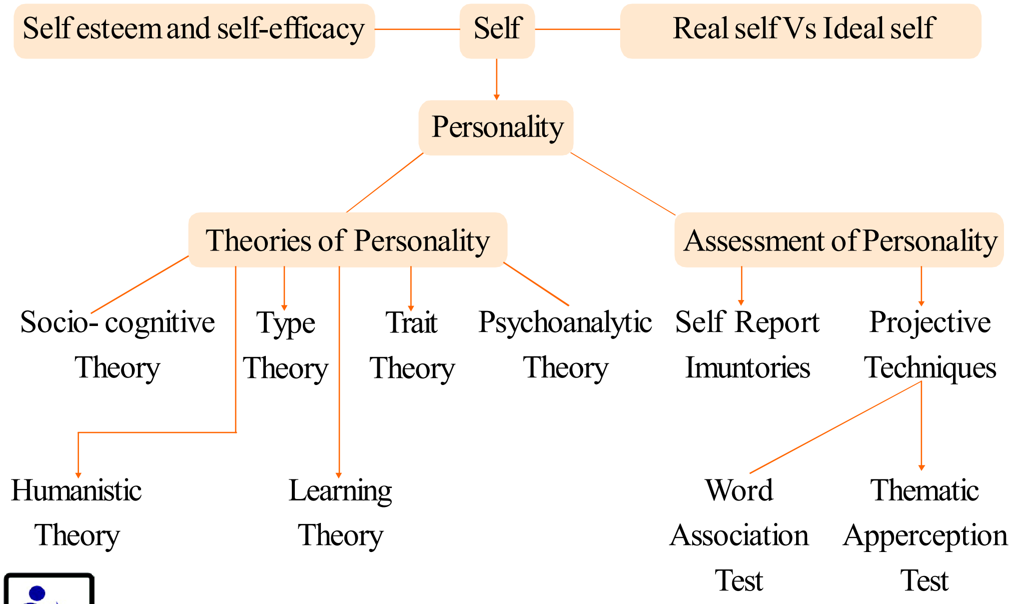
Notes

vi. Projective techniques make use of the unconscious tendency to ....one's own inner .... on others.

vii. Word association tests isabout quality of .... to words which are presented during testing.

viii. TAT assesses individual response to picture cards in terms of ...., ...and ....

WHAT YOU HAVE LEARNT



TERMINAL QUESTIONS

1. Explain the concept of Self, self-concept, and its development.
2. Define self-esteem and self-efficacy.
3. Describe the concept of personality.
4. Mention the trait theories of personality.
5. Describe the Freud's theory of personality and the assessment procedures.
6. Name two the humanistic theories of personality and explain any one theory?
7. What are the basic structural unit of personality in learning theory.
8. Explain the social-cognitive theory.
9. Explain self-report means of assessment.
10. Describe any one Projective tests of assessment.

ANSWERS TO INTEXT QUESTIONS

17.1

i. Interactions
ii. Positive, Negative
iii. Self-concept
iv. Positive, Negative
v. Initiative
vi. Childhood
vii. Parents, siblings, and friends
viii. Positive, Feedback
ix. Teachers and classmates/friends

17.2

i. Personality is our unique ways of behaving in different situations such as, excited, joyful, warm, or friendly, etc.

ii. Knowing the personalityof people enables us to predict their behaviour in different situations. The purpose of studying personality is to understand how it develops in a certain way. This knowledge would help us plan experiences that would facilitate change in a positive direction.

iii. Fill in the blanks

a. unique, flexible
b. positive

17.3

1. Type Theories & Trait theory
2. Hippocrates theory, Kretschmer's theory, Charak's theory and Jung's theory.
3. vata, pita and kapha
4. Cardinal, central and secondary
5. Central and secondary
6. Fill in the blanks

i. endomorphs, ectomorphs, mesomorphs
ii. Introverts, extroverts
iii. 16 PF
iv. Defining

Notes

17.4

i. Sigmund Freud
ii. Id ego superego
iii. Super ego
iv. Pleasure seeking
v. Libido or energy
vi. Oral, anal, phallic, latency, genital

17.5

i. Want
ii. Experience, will
iii. Organism, self
iv. Ideal
v. Real
vi. Self-esteem
vii. Real-self, ideal-self

17.6

i. Stimulus, Response
ii. Learned Bhehaviour
iii. Reward
iv. Genetics and Environment
v. Albert Bandura

17.7

i. Reliability, validity
ii. Social desirability, rating
iii. Qualities
iv. 567, ten
v. Personality Factors
vi. Project,Conflicts
vii. response
viii. Story, result, hero(story, character, feelings)

18

INTELLIGENCE

One of the widely studied psychological attributes is Intelligence. People differ from one another in their ability to understand complex ideas, adapt to the environment, learn from experience, engage in various forms of reasoning, and overcome obstacles.

LEARNING OUTCOMES

After studying this lesson, learner :

- describes the meaning of intelligence;
- discusses theories of Intelligence;
- explains the meaning of emotional intelligence;
- examines the relationship between creativity and intelligence; and
- understands the concept of emotional intelligence.

18.1 CONCEPT OF INTELLIGENCE

Intelligence is a key construct employed to know how individuals differ from one another. Intelligence is the global capacity to think rationally, understand the world, and use available resources effectively when faced with challenges. Intelligence tests provide a global measure of an individual's general cognitive competence.

Different authors have defined intelligence in several ways. Alfred Binet was one of the first psychologists who conceptualized intelligence. He defined intelligence 'as the ability

Notes

to judge well, understand well, and reason well'. Wechsler, whose intelligence tests are most widely used, understood intelligence in terms of its functionality, i.e. its value for adaptation to the environment. He defined it as 'the global and aggregate capacity of an individual to think rationally, act purposefully, and deal effectively with her/his environment.' Others like Gardner and Sternberg have understood intelligence in terms of an individual not only adapting to the environment but also actively modifying or shaping it. Therefore, there is no one definition of intelligence. It is a very dynamic and ever-evolving concept.

One of the widely used measures of intelligence in an individual is 'IQ' or intelligence quotient. IQ as a concept was derived by William Sterns in 1912, wherein he formulated that an IQ is an individual's mental age (MA) divided by his/her Chronological age (CA) and multiplied by 100. IQ is represented by the following formula:

Intelligent Quotient (IQ)=MA/CA x 100

The purpose of multiplication is the avoidance of decimal points. When MA is equal to CA, the IQ is said to be 100 which is the average score of intelligence. When MA is greater than CA, the IQ is above 100 and the individual is said to be more intelligent than his/her peers. When MA is less than CA, IQ is below 100 and then the individual is considered below average as compared to others of his/her age.

18.1.1. Extremes Of Intelligence

IQ scores are distributed in the population in such a way that the scores of most people tend to fall in the middle range of the distribution. Only a few people have either very high or very low scores. The frequency distribution for the IQ scores tends to approximate a bell-shaped curve, called the normal curve. This type of distribution is symmetrical around the central value, called the mean.

The mean IQ score in a population is 100. People with IQ scores in the range of 90-110 have normal intelligence. Those with IQ below 70 are suspected to have 'intellectual deficiency', while persons with IQ above 130 are considered to have exceptional talents.

Intellectual Deficiency

There are children who face enormous difficulty in learning even very simple skills. Those children who show intellectual deficiency are termed as 'intellectually disabled'. As a group, there is wide variation among the intellectually disabled. The American Association on Mental Deficiency (AAMD) views intellectual disability as "significantly

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sub-average general intellectual functioning existing concurrently with deficits in adaptive behaviour and manifested during the developmental period". This definition points to three basic features. First, in order to be judged as intellectually disabled, a person must show significantly sub-average intellectual functioning. Persons having IQs below 70 are judged to have sub-average intelligence. The second relates to deficits in adaptive behaviour. Adaptive behaviour refers to a person's capacity to be independent and deal effectively with one's environment. The third feature is that the deficits must be observed during the developmental period that is between 0 and 18 years of age.

Individuals who are categorised as having intellectual disabilities show significant variation in their abilities, ranging from those who can be taught to work and function with special attention to those who cannot be trained and require special attention throughout their lives. The different levels of intellectual disability are: mild (IQs 55 to approximately 70), moderate (IQs 35-40 to approximately 50- 55), severe (IQs 20-25 to approximately 35-40), and profound (IQs below 20-25). Although the development of people with mild disabilities is typically slower than that of their peers, they can function quite independently, and hold jobs and families. As the level of disability increases, the difficulties are strongly marked. People with moderate disabilities, lag behind their peers in language and motor skills. They can be trained in self-care skills, and simple social and communication skills. They need to have a moderate degree of supervision in everyday tasks. Individuals with profound and severe disabilities are incapable of managing life and need constant care for their entire lives. AAMD classification of mental retardation is presented in the table below.

Table 1: AAMD classification of mental retardation.

Level	**Intelligence Quotient**	**Adaptation to Demands of life**
Mild	50-70	Educable, can function independently, and hold jobs and family.
Moderate	35-49	Trainable for self-care but not educable.
Severe	20-34	Incapable of managing life and need constant care for their entire lives May perform simple tasks under the supervision
Profound	Below 20	Require constant aid and supervision. Incapable of managing life and need constant care for their entire lives

Intellectual Giftedness

Intellectually gifted individuals show higher performance because of their outstanding potential. The study of gifted individuals began in 1925 when Lewis Terman followed the lives of about 1500 children with IQs of 130 and above to examine how intelligence was related to occupational success and life adjustment. Although the terms 'talent' and 'giftedness' are often used interchangeably, they mean different things. Giftedness is exceptional general ability shown in superior performance in a wide variety of areas. Talent is a narrower term and refers to the remarkable ability in a specific field (e.g., spiritual, social, aesthetic, etc.). The highly talented are sometimes called 'prodigies'. It has been suggested by psychologists that giftedness from the teachers' point of view depends on a combination of high ability, high creativity, and high commitment. Gifted children show early signs of intellectual superiority. Even during infancy and early childhood, they show a larger attention span, good recognition memory, preference for novelty, sensitivity to environmental changes, and early appearance of language skills. To equate giftedness with brilliant academic performance is not correct. Athletes who show superior psychomotor ability are also gifted. Each gifted student possesses different strengths, personalities and characteristics. Performance on intelligence tests is not the only measure for identifying the gifted. Many other sources of information, such as teachers' judgment, school achievement records, parents' interviews, peer and self-ratings, etc. can be used in combination with intellectual assessment. To reach their full potential, gifted children require different educational and life enrichment programmes beyond those provided to normal children in regular classrooms.

INTEXT QUESTIONS 18.1

Note: Give your answer in the space given below and compare it with answers given at the end of this unit.

1. Intelligence is the ability to evaluate, judge and adapt to the environment to function effectively. (True/False)

2. Intelligence is the product of both nature and nurture. (True/ False)

3. There are four subcategories of mental retardation; they are mild, moderate, _________ and ___________.

4. The highly talented people are sometimes called _______.

18.1.2 THEORIES OF INTELLIGENCE

We now move further to describing various widely accepted theories. The sequence of these theories also indicates the history of intelligence theories.

Uni-factor theory: Alfred Binet was the first psychologist who formalized the concept of intelligence in terms of mental operations. Binet's theory of intelligence is conceptualized as consisting of one similar set of abilities which can be used for solving any or every problem in an individual's environment.

Two-factor theory: Charles Spearman (1927) proposed a two-factor theory of intelligence. He suggested that intelligence consisted of a general factor (g-factor) and some specific factors (s-factors). The g-factor includes mental operations which are primary and common to all performances' factors include all specific aspects of intelligence that help you in excelling in your field of interest. For example, Lata Mangeshkar in singing or Sachin Tendulkar in cricket.

Theory of primary mental abilities: Louis Thurstone proposed the theory of primary mental abilities. It states that intelligence consists of seven primary abilities, each of which is relatively independent of the others. These primary abilities include: (i) Verbal Comprehension (grasping the meaning of words, concepts, and ideas), (ii) Numerical Abilities (speed and accuracy in numerical and computational skills), (iii) Spatial Relations (visualising patterns and forms), (iv) Perceptual Speed (speed in perceiving details), (v) Word Fluency (using words fluently and flexibly), (vi) Memory (accuracy in recalling information), and (vii) Inductive Reasoning (deriving general rules from presented facts).

Theory of multiple intelligence: Howard Gardner (1983) proposed the theory of multiple intelligence, wherein intelligence is not considered a single entity; rather believes in the existence of distinct types of intelligence. Each of this intelligence is independent of the other. This means that, if a person exhibits one type of intelligence, it does not necessarily indicate being high or low on other types of intelligence. Also, that different types of intelligence interact and work together to solve a problem. Gardner described eight types of intelligence; they are as followed:

- **Linguistic (skills involved in the production and use of language):** It is the capacity to use the language fluently and flexibly, to express one's thinking and also understand other people. Persons high on this intelligence are 'word-smart', i.e., they are sensitive to different word meanings, can articulate, and can create

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linguistic images in their minds. Poets and writers are very strong in this component of intelligence.

- **Logical-Mathematical (skills in scientific thinking and problem-solving):** Persons high on this type of intelligence can think logically and critically. They engage in abstract reasoning and can manipulate symbols to solve mathematical problems.

- **Spatial (skills in forming visual images and patterns):** It refers to the abilities involved in forming, using, and transforming mental images. A person high on this intelligence can easily represent the spatial world in the mind. Pilots, sailors, sculptors, painters, architects, interior decorators, and surgeons are likely to have highly developed spatial intelligence.

- **Musical (sensitivity to musical rhythms and patterns):** It is the capacity to produce, create and manipulate musical patterns.

- **Bodily-Kin aesthetic (use whole or portions of the body flexibly and creatively):** This consists of the use of the whole body or portions of it for the display or construction of products and problem-solving. People high on this type of intelligence are most likely to become athletes, dancers, actors, sportspersons, gymnasts, and surgeons.

- **Interpersonal (sensitivity to subtle aspects of others' behaviours):** It involves the skill of understanding the motives, feelings and behaviours of other people to form and bond into a comfortable relationship with others. Professionals high in interpersonal intelligence may include Psychologists, counsellors, politicians, social workers, and religious leaders.

- **Intrapersonal (awareness of one's own feelings, motives, and desires):** This refers to the knowledge of one's internal strengths and limitations and using that knowledge to effectively relate to others. Persons high on this ability have finer sensibilities regarding the purpose of their life and existence. Philosophers and spiritual leaders seem to be high on this type of intelligence.

- **Naturalistic (sensitivity to the features of the natural world):** This involves complete awareness of our relationship with the natural world. Hunters, farmers, tourists, zoologists, bird watchers and others seem to be high on naturalistic intelligence.

- **Triarchic theory of intelligence:** Robert Sternberg (1985) proposed the triarchic theory of intelligence, wherein intelligence is viewed as "the ability to adapt, to shape and select the environment to accomplish one's goals and those of one's society and culture". This theory conceptualizes intelligence into three basic types: Componential, Experiential, and Contextual.

- **Componential Intelligence:** Componential also known as analytical intelligence, which is the analysis of information to solve problems. This intelligence has three components, each serving a different function. First is the knowledge acquisition component, which is responsible for learning and acquisition of ways of doing things. The second is the meta or a higher order component, which involves planning concerning what to do and how to do it. The third is the performance component, which involves actually acting upon a planned course of action.

- **Experiential Intelligence:** Experiential also known as creative intelligence, is involved in using past experiences creatively to solve novel or new problems. People high on this aspect integrate different experiences in an original way to make new discoveries and inventions.

- **Contextual Intelligence:** Also called practical intelligence, involves the ability to deal with environmental demands encountered on a daily basis. It may be called 'street smartness' or 'business sense'.

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INTEXT QUESTIONS 18.2

Give your answer in the space given below and compare it with the answers at the end of this unit.

1. Triarchic theory of intelligence includes three components: componential, ________, and contextual intelligence.

2. Which one is not the part of Gardner's theory of multiple intelligence:

   a) Interpersonal

   b) Structural

   c) Naturalistic

   d) Intrapersonal

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3. Theory of intelligence given by Spearman is called:

   a) Uni-factor theory

   b) multi-factor

   c) Primary mental abilities

   d) Two-factor

18.1.3. Assessment Of Intelligence

The timeline of the history of the assessment of intelligence indicates the contribution of several experts in the field toward the development of psychological testing regarding intelligence.

In 1905, Alfred Binet and Theodore Simon made the first successful attempt to formally measure intelligence. Later, in 1908, when the scale was revised, they gave the concept of Mental Age (MA), which is a measure of a person's intellectual development relative to people of her/his age group. A mental age of 10 means that a child's performance on an intelligence test will be equal to the average performance level of a group of 10-year-olds. Chronological Age (CA) is the biological age from birth. A bright child's MA is more than her/his CA; for a dull child, MA is below the CA. In 1912, William Stern, a German psychologist, devised the concept of the Intelligence Quotient (IQ). IQ refers to mental age divided by chronological age and multiplied by 100. The number 100 is used as a multiplier to avoid the decimal point. When the MA equals the CA, the IQ equals 100. If MA is more than the CA, IQ is more than 100. IQ becomes less than 100 when the MA is less than the CA. For example, a child with an MA of 5 would have an IQ of 50 (5/10 ´ 100). The average IQ in the population is 100, irrespective of age.

Wechsler further defined intelligence as the capacity of an individual to act purposefully, to think rationally, and to deal effectively with his or her surroundings or situation. David Wechsler published the first intelligence test explicitly designed for an adult population, known as the Wechsler Adult Intelligence Scale, or WAIS. After the WAIS was published, Wechsler extended his scale for younger people, creating the Wechsler Intelligence Scale for Children, or WISC.

18.1.4 Tests of intelligence

Wide variety of intelligence tests have been devised, which can be categorised on the basis of the following criteria:

- **Individual or Group Tests:** An individual intelligence test is one which can be administered to one person at a time. A group intelligence test can be administered to several persons simultaneously. Individual tests require the test administrator to establish a rapport with the subject and be sensitive to her/his feelings, moods and expressions during the testing session. Group tests, however, do not allow an opportunity to be familiar with the subjects' feelings. Individual tests allow people to answer orally or in a written form or manipulate objects as per the tester's instructions. Group tests generally seek written answers usually in a multiple-choice format. Bhatia's Battery is an example of an Individual test whereas Raven's progressive matrices is a group test

- **Verbal, Non-Verbal, or Performance Tests:** Verbal tests require subjects to give verbal responses either orally or in a written form. Therefore, verbal tests can be administered only to literate people. The non-verbal tests use pictures or illustrations as test items. Performance tests require subjects to manipulate objects and other materials to perform a task. Written language is not necessary for answering the items. For example, Koh's' Block Design Test contains a number of wooden blocks. The subject is asked to arrange the blocks within a time period to produce a given design. A major advantage of performance tests is that they can be easily administered to persons from different cultures. For example, the Joshi's Intelligence test is a verbal test of intelligence catering to the Indian population.

- **Culture-Fair or Culture-Biased Tests:** Many intelligence tests show a bias to the culture in which they are developed. Tests developed in America and Europe represent an urban and middle-class cultural ethos. Hence, educated middle-class white subjects generally perform well on those tests. The items do not respect the cultural perspectives of Asia and Africa. The norms for these tests are also drawn from western cultural groups. Psychologists have tried to develop tests that are culture-fair or culturally appropriate, i.e., one that does not discriminate against individuals belonging to different cultures. In such tests, items are constructed in a manner that they assess experiences common to all cultures or have questions in which language usage is not required. Non-verbal and performance tests help reduce the cultural bias usually associated with verbal

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tests. For example, the Bhatia battery test of intelligence is a performance test to measure the intelligence of the Indian population.

INTEXT QUESTIONS 18.3

Note: Write your answer in the space given below and compare it with the answers at the end of this unit.

1. Binet and _______ were the first to initiate the formal measurement of intelligence.

2. The concept of Intelligence quotient (IQ) was given by _________.

3. Shabnam is 12 years old and her mental age is 15 years. What would be her IQ based on the provided information?

   a) 120 b) 80 c) 125 d) 100

4. Koh's' Block Design Test is an example of ________ type of test.-

18.2 EMOTIONAL INTELLIGENCE

The notion of emotional intelligence broadens the concept of intelligence beyond the intellectual sphere/domain and considers that intelligence includes emotions. Emotional intelligence is a set of skills that underlie accurate appraisal, expression, and regulation of emotions. It is the feeling side of intelligence. A good IQ and scholastic record are not enough to be successful in life. You may find many people who are academically talented but are unsuccessful in their own life. They experience problems in the family, workplace, and interpersonal relationships. What do they lack? Some psychologists believe that the source of their difficulty may be a lack of emotional intelligence. This concept was first introduced by Salovey and Mayer and popularised by Daniel Goleman. Salovey and Mayer defined emotional intelligence as "the ability to monitor one's own and other's emotions, to discriminate among them, and to use the information to guide one's thinking and actions". This definition covers four aspects of emotional intelligence they are emotional perception, emotional integration, emotional understanding, and emotional management. Whereas Goleman defined EQ as a cluster of traits relating to the emotional side of life. Goleman proposed 5 aspects of Emotional Intelligence. They are:

1. Knowing one's own emotions

2. Managing one's own emotions

3. Motivating oneself

4. Recognizing the emotions of others

5. Handling emotions

Emotional Quotient (EQ) is used to express emotional intelligence in the same way as IQ is used to express intelligence.

18.3. CREATIVITY AND INTELLIGENCE

In recent years, our understanding of creativity has broadened. Creativity is not just limited to a selected few - the artist, the scientist, the poet or the inventor. An ordinary individual who is engaged in simple occupations like pottery, carpentry, cooking, etc. can also be creative. However, it has been said that they are not working at the same level of creativity as an eminent scientist or a writer. Hence, we can say that individuals vary in terms of the level and the areas in which they exhibit creativity and that all may not be operating at the same level. For example, the concept of a vertical garden is not only a beautiful site but is also an effective way of reducing the carbon footprints of the buildings by filtering pollutants out of the air, which results in a better quality of air. Another level of creativity is working on what has already been established earlier by way of modifications, by putting things in new perspectives or to new use.

One important debate in understanding the variations in creativity has been the relationship of creativity with intelligence. Terman found that persons with high IQs were not necessarily creative. Researchers have also found that both high and low levels of creativity can be found in highly intelligent children and also children of average intelligence. The same person, thus, can be creative as well as intelligent but it is not necessary that intelligent ones, in the conventional sense, must be creative. Intelligence, therefore, by itself does not ensure creativity. Researchers have found that the relationship between creativity and intelligence is positive. All creative acts require some minimum ability to acquire knowledge and the capacity to comprehend, retain, and retrieve. Creative writers, for example, need a facility in dealing with language. The artist must understand the effect that will be produced by a particular technique of painting, a scientist must be able to reason and so on. Hence, a certain level of intelligence is required for creativity but beyond that intelligence does not correlate well with creativity.

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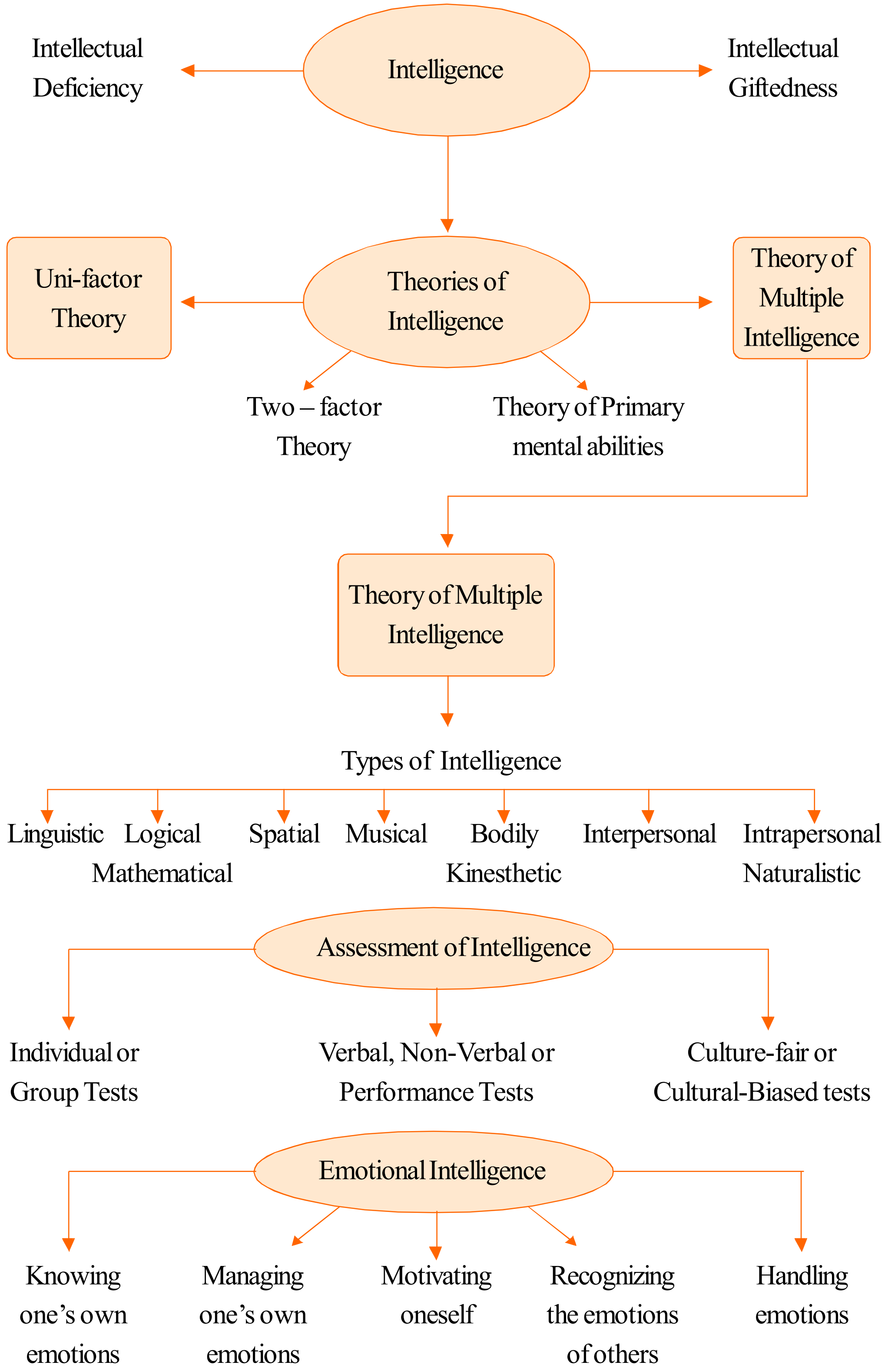
A general feature of most of the creativity tests is that they are open-ended. They permit the person to think of different answers to the questions or problems in terms of her/his experiences, whatever these may have been. There are no specified answers to questions or problems in creativity tests. Creativity tests involve divergent thinking and assess such abilities as the ability to produce a variety of ideas, i.e., ideas which are off-the-beaten-track, the ability to guess causes and consequences, the ability to put things in a new context, etc. This is contrary to the tests of intelligence which mostly involve convergent thinking. In tests of intelligence, the person has to think of the right solution to the problem and the focus is on assessing abilities such as memory, logical reasoning, accuracy, perceptual ability, and clear thinking. There is little scope for the expression of spontaneity, originality, and imagination. Since expressions of creativity are varied, tests have been developed using different stimuli like words, figures, action, and sounds. These tests measure general creative thinking abilities like ability to think of a variety of ideas on a given topic/ situation, alternative ways of looking at things, problems or situations, to guess causes and consequences, to think of unusual ideas to improve and to use common objects, ask unusual questions and so on.

ACTIVITY

1. Prepare a list of characteristics of an Intelligent person.
2. To identify creativity, prepare a list of items of daily use like paper, pencils, water bottles etc., and ask your friends to tell the uses of these items as much as they can.

WHAT YOU HAVE LEARNT



TERMINAL QUESTIONS

1. What is Intelligence? Discuss different theories of Intelligence.
2. What do you mean by assessment of intelligence? Describe different types of intelligence tests.
3. Define Creativity. Discuss the relationship between creativity and intelligence.
4. What is emotional intelligence? Explain its importance in a person's life.
5. What is the formulae for calculating IQ and what does it represent?
6. What are the different levels of intellectual disability and how do they vary in terms of abilities and needs for support and care?
7. How is intellectual giftedness measured and what educational programs are needed for gifted children to reach their full potential?
8. What is the theory of multiple intelligence proposed by Howard Gardner and how does it differ from other theories of intelligence?
9. What are the different types of intelligence explained by Howard Gardner? Explain any four briefly.
10. What are the three basic types of intelligence according to Robert Sternberg's Triarchic theory of intelligence?

ANSWERS TO INTEXT QUESTIONS

18.1

1. True
2. True
3. Severe and profound
4. Prodigies

18.2

1. Experiential
2. b) Structural

3. d) Two factor theory

18.3

1. Simon
2. William Stern
3. c) 125
4. Performance test

18.4

1. c) Both of the above
2. c) Divergent
3. b) Terman
4. d) Goleman

MODULE -5

Social Processes and Behavior

This module introduces the learners to the various social processes that influence human behaviour and social functioning. The learners will understand different group processes and their influence on individuals and groups. Further the learners will also understand the concept of leadership, attitude and pro-social behaviour.

19. Group Processes

20. Attitude

21. Pro Social Behavior

19

GROUP PROCESSES

Rahul is a 17-year-old boy. He was playing a game on his mobile phone, when his mother called out to him to accompany her to the market to buy vegetables. He was reluctant to go but at last he agreed. On his way to the market, they passed by a playground and saw a cricket match going on in full swing. The players were in matching uniforms and all were concentrating on the action of the batsman and the bowler. On reaching the market, he saw many people buying things of different kinds, some were bargaining and others were giving money to the shopkeepers. On the other end, the shopkeepers were selling their goods and calling out to the customers to buy from them. He was quite fascinated seeing the commotion going around and began to wonder, what could be the difference between this collection of people in the market and those in the playground. Like Rahul, you must have encountered a similar experience. You must have seen a huge collection of people in the bazaar or a mall. Are they called groups? No, they are just a mere gathering of people who happened to be at the same time and place for their own personal purpose. So then, what are groups? Can those players in the playground fit to be called a group? How are groups different from other kinds of gathering of people?

In this chapter, the questions will be answered and additionally, you will learn about groups and gain a wide understanding of its features and its influence on performance and decision making in our day to day life. Later in the chapter, you will also learn about leadership and the essential characteristics of effective leaders.

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LEARNING OUTCOMES

After studying this lesson, learner :

- describes group and its features;
- recognizes the type of groups which we come across in our life;
- describes the formation of groups;
- determines the influence of groups on performance and decision making;
- defines leadership; and
- identifies the characteristics of effective leaders.

19.1 GROUPS

Groups are people who have come together for a common agenda and purpose. Two people are often considered as a "dyad" rather than a "group." A group consists of three or more people who interact and are interdependent on each other. For example, family, football team, dance troupe, a bunch of people who are working on a specific project, etc. All of these are considered as groups as the members interact and influence one another and are different from other collections of people.

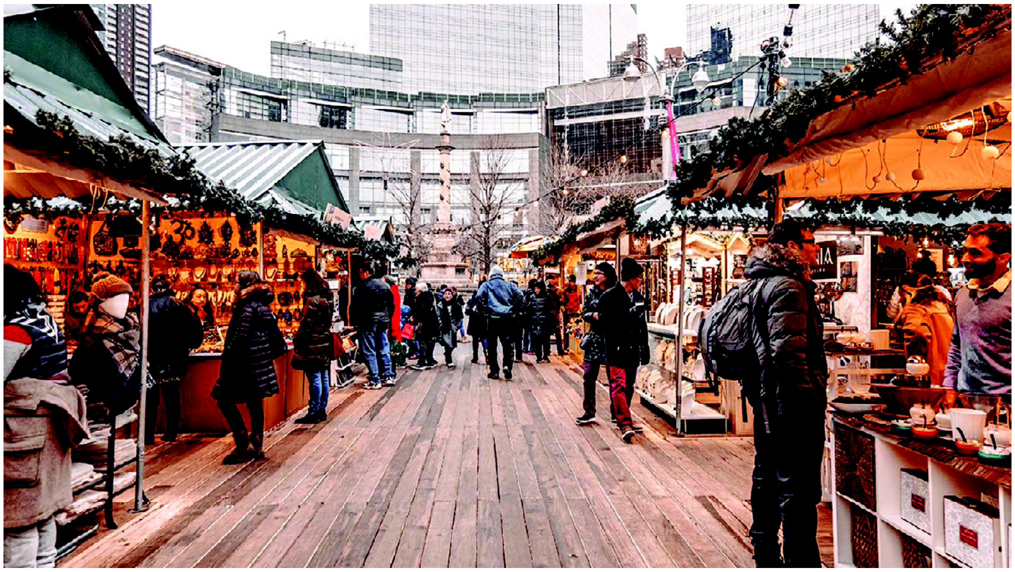

Figure 19.1: A group of people working on a project (top) and a crowd of people in the market going about with their own work (bottom)
(Source:-www.unsplash.com)

Groups have the following salient features

(i) Groups are governed by social norms. Norms are conventional or unwritten social practices, behaviors, thinking, outlook, etc that are widely accepted by society. These norms guide the members how to behave and act in a group. For example, a sports team should wear team uniforms during the match/game and no other casual clothes;

(ii) Groups have common needs, motives and goals; moreover, the members in the group strongly depend on each other to achieve their desired outcome;

(iii) The individuals constitute the group, interact and share ideas and thoughts with one another;

(iv) Group members have well defined social roles- specific expected behavioral roles that they are supposed to perform and also to do it well. For example, a teacher and a student in a class have different roles and are expected to act as per their roles assigned to them;

(v) The people who constitute a group are interdependent on one another- the action or behaviour of one has an impact on the other.

Thus, groups are organized collections of individuals who have come together for a common motive, purpose and goals, guided by social norms and expected to behave as per role expectations.

Functions of Groups

a) Groups fulfill the individual need for belongingness. As a social being, we feel the need to relate to one another, seek affection and care for each other.

b) People also join groups in order to feel secure and protected as it gives them a sense of greater strength and power when in a group.

c) Groups also give us a sense of identity as to how we define ourselves - a set of people who share distinct characteristics like common origin, religion, race, etc. This sense of identity comes from being a member of a certain group which gives the members their self-worth or value.

d) Being in a group helps them to increase their knowledge by getting information from other members.

e) Groups also help the members to achieve their goals quickly as compared to working alone.

Being in a group makes them feel closer to one another and therefore develops a sense of security through shared identity and power. The members are able to identify themselves and one another based on their affiliation with the respective groups.

ACTIVITY

Identify and list out the different types of groups that you are part/member of.

INTEXT QUESTIONS 19.1

Fill in the blanks:

a) Groups satisfy our need for………………..and ……………….…..

b) ………………..directs our actions and ways of behavior in groups.

19.2 GROUP FORMATION

There are many conditions and factors which are conducive and lead to the formation of groups. The three main factors are:

(i) **Groups are formed due to proximity like, physical proximity. For example:** residents of the same building or colony who often meet for morning walks constitute a group. The more people tend to meet each other, the more

we come to know about one another and the more likelihood to form groups depending on similar interests and other likings.

(ii) Groups are also formed due to similarity .People discover similar interests, share common ideas, opinion, values and other factors tend to bond with one another based on their similarities and may come together as a group. For instance, a Book Club where the members are part of the group due to their shared interest in reading books. It is a relationship based on stability and balance.

(iii) Having a common goal and objective could also be a reason for forming groups. Trade Union is an example of an association of workers formed for the common interests and fulfilment of the common goals.

Figure 19.2: A group of people doing yoga. Such groups are usually formed due to similar interest in health and fitness. (Source:-www.unsplash.com)

19.2.1 Group Development

In 1965, a psychologist by the name, Bruce Tuckman proposed five stages of group development: forming; storming; norming; performing and adjourning. Each stage plays a vital role in building a high-functioning team.

These five stages are as follows:

1. Forming

This is the initial stage and the group is characterized by uncertainty and lack of clearly defined structure. People are just getting to know one another and discovering the ideas and opinions of one another. It is the period of relationship

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development. Orientation day at a new job is an example of a group forming stage.

2. Storming

In this stage, the members become more aware of one another's weaknesses or habits. With growing familiarity, conflicts might arise due to disagreements, frustration or annoyance with each other. The reasons for the conflicts could be differences on what are the group goals, how to achieve it, who will lead the group, where to get the resources, division of work or responsibilities and expectations from the task or job at hand. It is important to work through the conflicts and then develop well-structured and clearly defined goals of the group.

3. Norming

At this stage, norms are developed regarding the behavior of its members and also the possibilities and expectations from each member. A group identity is formed and a cordial relationship develops among the group members. For example, in a dance troupe, the members began to identify themselves not only as individual dancers, but as a group of dancers. Therefore they begin to understand the need to perform their respective roles and cooperate more with the fellow troupe members to get the perfect combination and rhythm. The members are now more committed towards achieving the group goals.

4. Performing

Once the norming stage is completed, the group members unitedly work towards the attainment of the targets of the group. The group becomes functional and now it is time for performance. The group members are willing to co-operate and trust each other and are enthusiastic to adapt as per the need of the overall group.

5. Adjourning

It is the final stage where the group after achieving the target or goals for which it was set up is dissolved. The existence of the group is no longer required as the purpose has been met.

However, you should note that for some groups, the performance stage is the final one. But for some groups formed temporarily, adjourning is the last stage in group formation as once the task is completed, it is dissolved. The stages of development of groups do not always flow in a rigid stage by stage pattern. Sometimes the stages can

go hand in hand or can start from the later stage or may even skip some of the stages. Therefore, it is important to note here that each group is unique in its formation and at times the sequence depicted in the five stages model may vary from one group to the other.

FORMING ➡ STORMING ➡ NORMING ➡ PERFORMI ➡ ADJOURNING

Figure 19.3: Stages of group development

19.2.2 Composition of Groups

A structure of the group is formed in the process of group formation. Groups have distinctive features and key components. They are given below:

- **Status:** Members of a group occupy different positions or rank within the group. Basically it is the hierarchies in the group which defines a member's position in the group. For example, a cricket team has captain, vice-captain, senior and junior players.
- **Roles:** The members in the group do not perform the same functions and are expected to play different important roles and complete the task as per the role. Sometimes the roles are assigned and at other times the roles are acquired. For example, in a football team there are goalkeepers, defenders, midfielders, forwards and strikers.
- **Norms:** Standard and accepted rules which govern the behavioural conduct within a group that might not be written but is considered the appropriate way to follow. For instance, the expected manner in which the students should behave in the class like to be attentive, maintain silence and so on.
- **Cohesiveness:** The force that binds members in a group, like a feeling of oneness, togetherness, belongingness and many other factors. The out-group is seen as something different and the presence of the out-group is seen as a competitive threat and it consequently leads to the increased bonding of the members in their own groups.

19.3 TYPES OF GROUPS

You must have come across many types of groups in your daily life. Nature of groups can differ from one another in terms of their function- social service or profit making business; size - football team or citizen of a country; duration -short term group formed

for a specific project or a religious group; geographical distribution - an Asian or an African group and so on. People may belong to different types of groups at same time.

The various groups can be broadly categorized as listed below:

(i) Primary group

Primary group is a group in which the relationship is close, personal and the members often have face to face interaction. Family is a perfect example of a primary group. A family is a social unit where the members have a close bond and intimate relationship among themselves.

(ii) Secondary group

The secondary groups in contrast are those where the relationships are less personal, intimate and indirect in nature. Large groups like, political parties, clubs, environmental movements fall under secondary groups. Unlike the primary group, the members do not involve much in each other's personal matters.

Thus, primary groups tend to be more cohesive than the secondary groups as it involve strong emotional bonding, deeper level of intimate relationships and one to one engagement with one another.

(iii) Formal Groups

In the formal groups, the members have clearly defined roles; communication flows through a channel and a professional relationship exist within the members. Military unit is an example of a formal group where the communication follows a standard procedure or channel. Here the command flows from higher official to lower order within the unit. They have a well-defined set of roles for the respective members in the group. The high-ranking officials are responsible for decision making and looking after the members of the unit.

(iv) Informal Groups

Informal groups are loosely structured with no rigid rules or defined roles and it is built on casual and friendly relations. These often get created spontaneously by people mostly to fulfil their social needs. A group of random people who gather to play cards is an informal group.

(v) In-groups

People tend to categorize themselves and others on the basis of race, religion, class, caste, gender etc. The groups in which we belong are known as in-groups.

We use words like 'we' for the groups in which we belong

(vi) Out-groups

We also categorize others on the basis of their race, religion, class, caste, gender and on the basis of other parameters. The groups in which we do not belong are termed as out-groups and we used the term 'they' for the out-groups.

In-groups and out-groups way of description of groups is used to highlight the similarities and differences between the groups. It is commonly found that people tend to favour their own groups and highlight more desirable features about their own groups, while the people of the out-groups are seen as being different and not so much in a positive manner. Though such perceptions or outlook are a common tendency of people, it is important to note that various diversities or differences should be upheld and celebrated, rather than shunned out as it contributes to the richness of the society.

(i) **Primary Groups** E.g. Family	(iii) **Formal Groups** E.g. Military Unit	v) **In-groups** E.g. we are Punjabis
(ii) **Secondary Groups** E.g. Book Club	(iv) **Informal Groups** E.g. Random group of people who gathers to play cards	(vi) **Out-groups** E.g. they are Gujaratis

Fig 19.4: Types of Groups with examples

INTEXT QUESTIONS 19.2

1. State whether the following statements are True or False

   i) Formal groups have properly organized structure. True/False

   ii) Cohesiveness creates disunity within the group. True/False

2. Fill in the blanks

   ……………...and…………….are reasons for formation of groups.

Notes

19.4 INFLUENCE OF GROUPS ON INDIVIDUAL PERFORMANCE AND DECISION MAKING

The presence of others has an important effect on our individual performance and in arriving at a concrete decision. Sometimes an individual's performance in a group tends to differ when the individual performs the same task alone. The presence of others sometimes can improve the performance and at other times it may also decrease an individual's performance. A detailed description of these phenomena is given below:

19.4.1 Social Facilitation

When an individual's performance is improved by the presence of others than when they are alone, this is called Social Facilitation. For example, you are able to run much faster when you are in a competition with others than when you run alone. A landmark study on social facilitation was done by Norman Triplett in 1898. In his research, he observed that the cyclist rode much faster when they raced against each other as compared to when they cycled alone. Social facilitation can occur by the presence of others who perform the same task. The mere presence of an audience or spectators can also lead to social facilitation. Social facilitation may not be observed in every situation. For instance, the presence of people may simply decrease the performance and the person may commit a series of errors in the presence of others. This occurrence is known as social inhibition. For example, a person who has a fear of public speaking may stutter or make silly mistakes while speaking to an audience, but is able speak effortlessly when practicing alone.

Figure 19.5: A bicycle race with the audience cheering on.

The presence of spectators and fellow competitors can lead to social facilitation

There are many reasons as to why social facilitation occurs.

- The presence of others leads to feelings of increased arousal which leads to improved performance.
- The second reason is due to the evaluation apprehension hypothesis, i.e. concern about negative evaluation or judgement by other people which arouses people to perform well, especially on simple tasks.
- The desire to make a positive impression on others.

19.4.2 Social Loafing

In social loafing, the influence of others leads to decrease in performance of an individual when performing an activity as part of a larger group than performing alone. Let us suppose in a certain school, all the students were asked to clean the school surroundings. Since there are hundreds of students, each student will expect the work to be done easily and therefore may choose to put in less hard work. Individuals may relax and rest from time to time knowing that the others would work and that they could pass-off unnoticed since there are hundreds of students working together on the same activity. This social behavior of reduction in individual efforts when the output of the group is combined together with the other members for a single task is known as social loafing. Here the intensity of efforts put in by each individual would be less when working in a group, as each member feels that their individual contribution is not identifiable. Whereas the efforts put in by each individual would be more if they were asked to work alone and clean a specific area, as their individual contribution would be identifiable. In social facilitation, the presence of others gives a boost to the performance of an individual when performing the task alone, but in social loafing the presence of other group members who performs the task together reduces the performance of individuals as their contribution is less noticeable and not easily evaluated.

Some of the reasons as to why social loafing occurs can be attributed to:

- Individual members feel less responsible for the collective task and therefore contribute less effort when they work as a group.
- Since the contribution of work of each member would not be checked separately, the motivation level of the group members decreases.
- Not proper coordination and differences in commitment level among the group members.

Social loafing could decrease by:

- Building the bond of the group members and making them understand the importance of collective responsibility.
- Making the group members feel important by counting their individual efforts.
- Make them know of the importance and value of the given work and thereby, increasing the pressure to work hard together.

19.4.3 Groupthink

Groupthink is a phenomenon which occurs in a group. Here the group members think that unity and harmonious relations of the group members is more important than taking correct decisions and rational judgements. Therefore, the group members try to maintain the balance of the groups by avoiding disagreement and conflict over logical arguments and reasoning. For example in a board meeting a company director proposed an idea about how to expand the business. All the board members agree to execute the idea, though some of them felt the idea was not really good but accepted the idea to maintain unity and good relation with the director and other board members.

Groupthink is likely to occur when the group is highly cohesive. Here the group members avoid sharing opinions which may be different from others. The group leader actively controls and directs the discussion and decision making. Groupthink also happens when there is a feeling of external threat by the members.

The consequences of Groupthink are:

- Inadequate survey of alternative actions.
- Failure to examine fully the risk of the accepted choice.
- Failure to gather the required information.
- Failure to develop contingency or optional plans.

How to avoid Groupthink:

- The leader of the group should be impartial and accept criticisms as well as differences of ideas from the members.
- Opinions and ideas from outgroup members should be invited and encouraged.
- The leader should create several sub-groups and let them meet separately and then bring all the sub-groups to share their respective ideas to be discussed.

- Sharing of anonymous opinion should be encouraged through secret ballot to gather honest opinion from the members.

19.4.4 Group Polarization

Group polarization is the tendency of groups to take extreme actions or decisions rather than the initial actions or decisions of the individual members. For example- individual group members may be initially contemplating to invest a small amount in a business venture but when business partners join in larger number, they becomes ambitious enough in investing a more exorbitant amount which could be quite risky. The concept of group polarization was developed after the phenomenon of risky shift effect put forth by James Stoner in 1961. Stoner studied the risk- taking decisions of groups and individuals and found that groups take much more risky decisions than individuals. This shift from the safer course of action when as an individual to a risky course when in a group is known as a risky shift and this concept prompted many scholars to do further research on group polarization.

Why Group Polarization happen?

- We usually want to be accepted and liked by others in a group. Therefore, there is a tendency to adopt the beliefs, ideas and attitudes in order to fit in the group. Individuals may favor a similar opinion of the group but may develop an extreme form. If people wish to be liked by members of a certain group, they generally take up the attitudes and actions consistent with the group so that they would be accepted more favorably by the members and the leader.

- If the majority of the group members strongly support an attitude or an action, the other in-group members who do not have a strong individual stand are likely to develop and strengthen his position in alignment with the position of the majority within the group.

INTEXT QUESTIONS 19.3

1. What is it called when the performance of an individual member improves in the presence of others?

2. What happens when individual members in a group put in less effort in a collective task?

3. Match the following

a)	Highly cohesive group	i)	Group polarization
b)	When groups members take extreme decisions than when as an individual	ii)	Group think
c)	Risky shift effect	iii)	James Stoner

19.5 LEADERSHIP

If we observe any group, organization or nation state; we would find that there would be a person who influences or exercises social power over the others in order to accomplish certain objectives of the group. Without such a person, no group or organization can expect to arrive at a decision to fulfill the goals and vision of the group. For example, a school captain has influence and exercise more power over the others in the class and he/she leads the fellow students in decision making and other aspects. Therefore, in every group we will find that there is a person who is more influential and who commands more respect or power than the other members of the group. The person who can influence the other members to think and act in the desired direction eventually becomes the leader of the group and the others followers. Leadership is defined as the process in which the leader influences and directs the followers towards the goal achievement of the group. Great leaders like Mahatma Gandhi, Abraham Lincoln, Nelson Mandela and Indira Gandhi are exceptional leaders who showed courage, led and guided their followers.

Figure 19.6:Mahatma Gandhi and Nelson Mandela are exemplary leaders of all times.

The leaders and followers need each other; they also influence each other while

arriving at a decision and in various other activities. However, leaders have more influence over the followers. Leaders are not the only ones who occupy power positions in a group but leaders may also be the ones who want to make a difference, bring positive changes and implement novel ideas for the welfare of the group.

Early researchers have promulgated two types of leadership theories. The first one is the Great Man Theory, which assumes that great leaders are born and have unique background which makes them different from the followers. The second is Trait Theory, which maintains that a person associated with certain personality traits like intelligence, self - confidence, creativity, drive, flexibility and integrity has the tendency to lead others. However, numerous studies have found that there is a very weak relationship between personality traits and leadership abilities.

Leadership should be understood from the amalgamation of both personality traits and situational context. Seeing leadership from a single point of view would lead to inadequate understanding of the true essence of a leader. Type of leadership varies depending on the kind of work, situation or circumstances. For example, in a social welfare organization, a relationship oriented leader would be more effective while for a private company, a task oriented leader would be more successful.

ACTIVITY

Identify any two leaders who have been your inspiration. What are the qualities that you admire in them?

There are different kinds of leadership styles. The most prominent among them are transformational, transactional, autocratic and democratic leaders. They differ in the type of functions they perform and the manner of functioning.

- Transformational leaders are characterized by trust and confidence in their subordinates; inspire them to achieve their goals, lead an exemplary life and strive to bring positive changes for the development of their subordinates. Mahatma Gandhi is an example of a transformational leader.
- Transactional leaders perform the act of planning, organizing, controlling and streamlining of the group. This type of leader is more concerned about the end result and meeting the set target of the group. For example, a manager of a company or the coach of a sports team. They give rewards, recognition and privileges to the subordinates for good performance and achievement of the group goals.

- An autocratic leader assumes absolute power and dictates the decisions and activities of the group. The leader determines the working system, imposes goals on the group and resists changes. Adolf Hitler is an example of an autocratic leader.
- A democratic leader believes in participation, involvement of the members in the activities and the decision -making process of the group. He indulges in interpersonal relations and works for the welfare of the members. Example: The Prime minister of a democratic country like India, England, etc.

Characteristics of Effective Leaders:

- Effective leaders work hard towards the achievement of goals
- Effective leaders are driven by a desire to excel.
- Have good communication skills.
- Effective leaders are self- confident and are assertive.
- Effective leaders are open to new ideas, experiences and can be flexible.
- Such leaders have high personal integrity and maturity.
- They have good interpersonal skills.
- They are considerate and have the ability to listen.

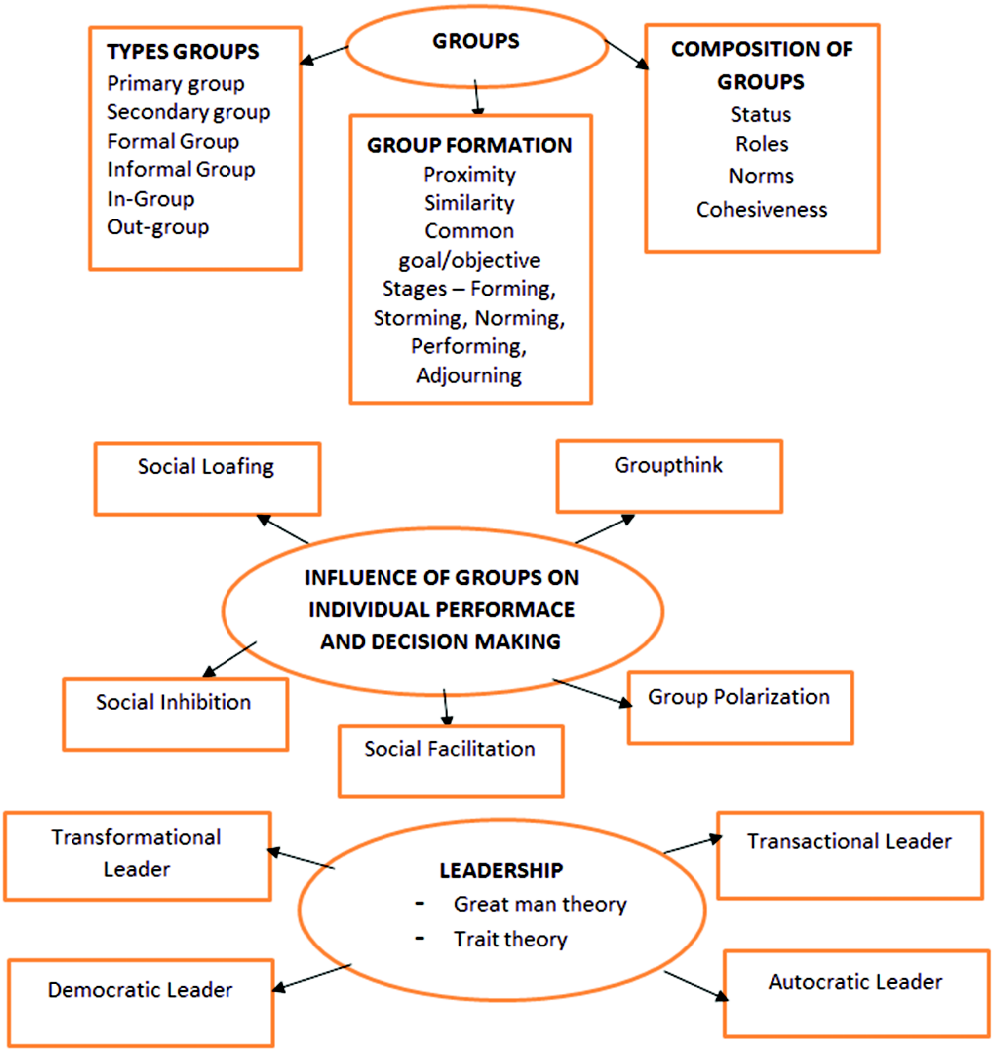
INTEXT QUESTIONS 19.4

Fill in the blanks

1. ……….. theory says that leaders have special personality characteristics which make them a leader.
2. ………… leaders are concerned about their subordinates' welfare.
3. …………. leader believes in collective work and participative decision making.
4. A leader should possess …….. skill in order to build good rapport and cordial relation with their members.

WHAT YOU HAVE LEARNT

Group Process



TERMINAL QUESTIONS

1. What are groups? Explain the basic features of groups.
2. Describe the factors and the stages in the formation of groups.
3. Describe the different types of groups with examples.
4. How can the presence of others influence our behavior and decision making?

5. Explain the nature of leadership. Give the characteristics of an effective leader.
6. What is the relationship between personality traits and leadership abilities according to early leadership theories and current research findings?
7. What are the reasons for group polarization and what is the phenomenon of risky shift effect in group decision making?
8. How different groups differ from one another in terms of characteristics and relationships among members?
9. What are the main features and characteristics of groups, and how do they differ from collections of individuals?
10. What are the five stages of group development proposed by Bruce Tuckman and how does each stage play a role in building a high-functioning teams?

ANSWERS TO INTEXT QUESTIONS

19.1

a) Belongingness, security

b) Norms

19.2

1. i) True ii) False
2. Proximity, similarity

19.3

1. Social Facilitation
2. Social Loafing
3. a) ii b) i c) iii

19.4

1. Trait
2. Transformational
3. Democratic
4. Interpersonal

20

ATTITUDE

"Sahil is a student of class 2^{nd}. One day he heard his elder sister talking about the need for waste segregation to control environmental pollution. Unable to understand the issue, Sahil asked his father to explain what waste segregation is and why is it important? His father told him that dry waste may include wrappers, glass, metals etc which can be later recycled and used whereas wet waste refers to biodegradable kitchen waste like fruits and vegetable peels, seeds, used tea leaves, egg shells ,paper bags etc that can be easily turned into rich manure for trees and plants. He told Sahil that waste segregation is important as it makes the process of recycling of waste into something useful easier. Waste segregation thus helps in controlling pollution by reducing the amount of waste that needs to be disposed off. His father also showed him several videos related to waste segregation and recycling. Sahil gets very inspired by all the information and pledges that he too would contribute towards waste segregation and protection of environment by informing his friends about it."

The above example clearly highlights how one evaluates and understands the social world around us in the form of attitudes.

In this chapter you will study the concept of attitude, its formation as well as changes in attitudes. The chapter also provides an insight into the concepts of stereotypes, prejudice and discrimination and how can these be reduced. Further the chapter aims to establish a link between how attitude and intergroup conflicts and also explores the ways of resolving such conflicts.

Notes

LEARNING OUTCOMES

After studying this lesson, learner :

- understands the concept of attitude;
- lists the factors that contribute to attitude formation;
- analyzes the process of attitude change;
- understands the concept of stereotypes, prejudice and discrimination;
- explains factors causing prejudice and discrimination; and
- specifies the nature of intergroup conflict and its resolution.

20.1 WHAT DO YOU UNDERSTAND BY ATTITUDE?

An attitude can be understood as an evaluation of certain aspects of the social world around us. It could be an evaluation of an event, an individual, an object or even any idea .It is an abstract construct that can only be inferred through the behaviour of the individual. Many of us think that attitudes are mere opinions about a person, a thing or an event. However, it's important to understand the difference between these two terms.

Just think about the number of times we use the phrase 'In my opinion….' Or 'I strongly feel that this needs to be handled like this…'or 'As per my understanding……".These examples indicate our 'opinion' or thoughts about a particular topic which may or may not be very important to us. Now when these thoughts or opinions that one holds are extremely important to them so much so that if someone opposes these, they react emotionally or when these opinions are not just simple ways of thinking but also start getting reflected in the behavioural patterns, then in such cases these are not simple views or opinions, these are called attitudes.

All definitions of attitudes agree that an attitude is a state of the mind, a set of views, or thoughts, regarding some topic (called the 'attitude object'), which have an evaluative feature (positive, negative or neutral quality). It is accompanied by an emotional component, and a tendency to act in a particular way with regard to the attitude object. The thought component is referred to as the cognitive aspect, the emotional component is known as the affective aspect, and the tendency to act is called the behavioural (or conative) aspect. Taken together, these three aspects have been referred

to as the A-B-C components (Affective-Behavioural- Cognitive components) of attitude.

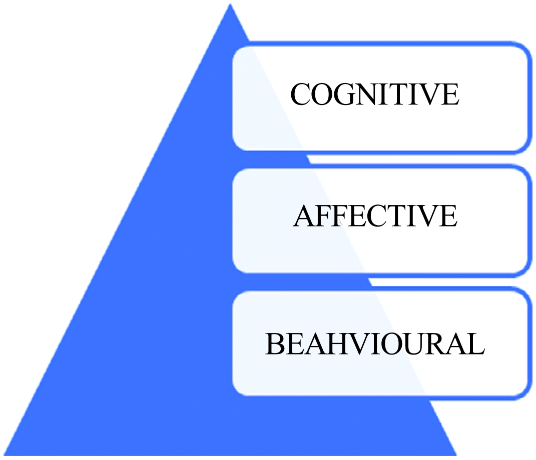


Figure 20.1: Three components of Attitudes

Example:

Neha, a college student has extremely negative views about the environmental hazard posed by use of plastic. She strongly feels that plastic use should be minimised as much as possible as its non-biodegradable nature has extremely harmful and long-term effect on our environment and ecosystem. Recently on her visit to market, she became extremely angry with a shopkeeper who was using a plastic bag for storage. Also she has been actively participating and organizing various awareness campaigns against plastic use in her locality as well as neighbouring societies.

What We Learn from the Example

Clearly, Neha has a negative attitude towards the use of plastic. The arguments that she shares with others clearly show that her attitude are acting at a cognitive level. Her attitude not only has an impact on her emotions (her anger with the shopkeeper) but also her behavior (participating in awareness campaigns).

LET'S DO

Case Study:

Rakhi has been greatly influenced by the "Swachh Bharat Abhiyan" initiative undertaken by the government to promote cleanliness. She often reads about the various cleanliness drive and awareness campaigns that have been organized in this regard. She keeps a track of the various community programs that have been organized through social media. Rakhi becomes angry when she sees people throwing garbage on streets. She

has even launched a weekly cleanliness drive in her locality with the help of an NGO.

Keeping the above case in mind, identify the cognitive, affective and behavioural components of Rakhi's attitudes towards 'Swachh Bharat" mission.

Answer: (Cognitive: information gathered by Rakhi by reading about various cleanliness drives and awareness campaigns; Affective: Rakhi becomes angry when she sees people throwing garbage on streets; Behavioural: Rakhi has organised a weekly cleanliness drive in her locality.)

20.2 FORMATION OF ATTITUDE:

Attitudes can be learned or acquired through various sources. The primary sources being:

1. Attitude formation through classical conditioning
2. Attitude formation through operant condition
3. Attitude formation through modeling/observational learning
4. Attitude formation through social comparison
5. Attitude formation through group and cultural norms
6. Attitude formation through exposure to information

Let us consider these sources in detail:

- **Attitude Formation through Classical Conditioning**

Classical conditioning is a basic form of learning in which an initially neutral stimulus acquires the potential to evoke responses through repeated pairing with another stimulus. For example, a student may not show any emotional response to a fountain pen he/she has recently purchased. However, it so happened that each time the student wrote the exam with this pen, he/she scored very good marks. This may lead the student to associate happiness with that pen.

Having understood the concept of classical conditioning, let us now understand how it shapes attitude. For example: Amit likes spending time with his best friend Robin. Robin is very fond of playing football and goes to play in the local park every day. In order to spend time with Robin, Amit has also started accompanying him to park and has started playing football. Now Amit has also started developing liking for the sport. This is because Amit has started associating positive affect that he has for Robin with

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his choice of sport i.e. football as well.

In other words, a positive attitude that Amit has for his friend Robin gets associated with the sport that was initially neutral for Amit.

- **Attitude Formation through Operant Conditioning**

Instrumental conditioning is another basic form of learning in which responses that lead to positive/rewarding outcomes or that is instrumental in avoiding negative outcomes are strengthened.

For example, a child observes that his/her mother feels happy when he/she finishes food. This makes the child regularly eat well and finish the food due to the positive reinforcement that the child receives. Taking another example, after returning from the school, the child used to eat food without washing hands. This habit of the child used to make his/her mother upset. The child realized that when he/she washes hands before eating, the mother is not upset anymore. Thus the child's behavior gets strengthened as it helps him/her to avoid negative reinforcement.

Let us now see how this principle of learning may lead to the formation of attitude. The role of instrumental conditioning in the formation of attitude can be easily seen particularly in case of children. A child may notice that when he/she switches off the lights and fans when nobody is in the room, the parents shower him/her with appreciation and praises for acting responsibly and saving electricity. This behavior eventually may get strengthened in the child in anticipation of positive outcomes and thus the child may develop positive attitude towards saving electricity.

- **Attitude Formation through Modelling: Example**

Formation of attitude is also possible through the process of observational learning/ modelling. A number of behaviors are learned by watching the activities of others and the outcome of such activities. For example: A child may watch his/her grandparents being respected and taken care of by everyone in the family. The child may acquire the same behavioral patterns and develop a positive attitude towards aged people in general.

- **Attitude Formation through Social Comparison**

Attitude may also be formed through the process of social comparison according to which we are constantly comparing ourselves with others with the desire to hold 'right' view about the social reality. This comparison may lead us to acquire attitudes from people we admire or people who serve as frame of reference for us.

For instance: Rajat admires an Olympic athlete, he follows the athlete on social media, reads articles and write-ups on him/her. Rajat is a big fan who idolizes the athlete. He gets to know that the athlete is committed to the social cause of 'Education of Street Children'. Rajat searches for NGOs working in this area and reads more about them. He may eventually develop a positive attitude towards the cause just like his idol.

- **Learning attitudes through group or cultural norms**

Very often, we learn attitudes through the norms of our group or culture. Norms are unwritten rules about behavior that people are expected to show under specific circumstances. Over time, these norms may get reflected in our attitudes.

- **Learning through exposure to information**

A person may acquire certain attitude on the basis of the information that he/she is exposed to. The sources of information can be many such as newspapers, books, internet, TV, movies and so on. For example: These days a lot of online campaigns regarding waste management are being circulated. This information is helpful in helping young children to adopt a positive attitude towards waste management by gaining information about its process of waste management as well as its benefits.

Figure 2: Sources of Attitude Formation

INTEXT QUESTIONS 20.1

1. List the various sources of attitude formation.

....

....

....

....

....

....

2. State whether the following statements are True or False

   a. The 'affective' component of attitudes is related to the thoughts and mental process.

   b. Attitude formation through classical conditioning involves positive and negative reinforcements.

   c. Observational learning does not contribute to attitude formation.

   d. Attitudes comprise of true components.

20.3 ATTITUDE CHANGE

During and after the process of attitude formation, attitudes may get changed/ or modified through various influences. Some attitudes change more than others do. Attitudes that are still in the formative stage, and are more like opinions, are much more likely to change compared to attitudes that have become firmly established, and have become a part of the individual's values.

Process of Attitude Change/Persuasion

Persuasion is defined as the process of consciously attempting to change the other person's attitudes through the presentation of different types of information/messages.

There are various factors that are instrumental in attitude change. Broadly these can be understood in terms of the characteristics or features of the source that wants to bring about an attitude change. For example: A teacher who wants the children to study

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every day in routine instead of just studying during examination time. Here the source that wants to bring about the change in attitude is the teacher.

Another important factor is the characteristic or nature of the message used for persuasion. In the above example the teacher could be employing messages of different nature ranging from rational and logical appeal in terms of how it is not possible to cover the entire syllabus thoroughly within few days just before exams to emotion based appeals that would trigger certain emotions in the target i.e. the students in this case. For instance the teacher in this case could tell the students how if they don't study in routine, they could score very poorly in their exams and may even fail thus triggering fear.

Further it is important to note that it's not just the nature of source and message but also the characteristics of the target that can influence the process of attitude change. For instance in the above example how much the students are motivated and goal driven would be influencing the kind of impact they would be experiencing when subjected to a persuasive message from their teacher.

Now let us consider these three factors in more detail:

Source characteristics

Source credibility, expertise and attractiveness are three important features that affect attitude change. Attitudes are more likely to change when the message comes from a highly credible source rather than from a low-credible source. For example, a teenager who wants to buy a new dress would find a member of the peer group to be more convincing than other sources because they believe that their peers would be having a fair idea about what's in trend and what's not. Similarly expertise in an area also increases the likelihood of attitude change. For instance, a dentist telling about the importance of regular dental check-ups and cleaning of teeth will have more impact than parents telling their kids the same thing. Another factor related to the source is the attractiveness of the source. For instance, if a youngster idolises a celebrity and follows him/her very closely then chances would be very high that the youngster develops a favourable attitude towards the product/brand that the celebrity is endorsing. This change in attitude would not be influenced that much by the product/brand itself by virtue of its features rather the change would be facilitated by the sheer liking that the youngster has towards the celebrity which eventually gets transferred to the product he /she is endorsing.

Message characteristics

The message that is presented to bring about the change in attitude is a very crucial determinant of attitude change. Various characteristics of messages that can impact attitude change are: Number of messages: Research has supported the view that increasing the number of message enhances its persuasive impact because of increased amount of information favouring attitude change as now the target would be exposed to a lot of arguments suggesting a change in attitude will be appropriate.

Repetition of message: For the first several times is also considered to be conducive for attitude change as through repetition of messages the target's attention gets captured making the process of attitude change more likely.

Logical/Emotional Appeal of the message also has an impact on the process of attitude change. A message could be having a logical or rational appeal in terms of factual information or an emotional appeal in terms of being able to trigger various emotions in the target of that communication. For example, a campaign against open defecation may point out how open defecation may cause diseases and infections in a rational and logical appeal. While on the other hand the campaign may focus on how the women folk have to face a lot of humiliation and shame in going out in open for relieving themselves, triggering emotions in the target audience.

Channel of communication i.e. the mode in which message is presented also has the potential to impact attitude change. For instance, research has shown that face to face communication is more effective than mass media in bringing about an attitude change as face to face interaction makes the message more personal and attention grabbing. For example any attempt to persuade girls to maintain menstrual hygiene using huge mass media campaigns will not have that amount of impact compared to a face to face personalised interaction with them as face to face interaction would also create a space for two way communication and sharing of concerns and issues from their side.

Target characteristics

Qualities of the target, such as moods, personality traits like openness to experiences, as well as knowledge related to the area of concern etc. may influence the likelihood and extent of attitude change. Research has shown that people who are in good mood are more likely to change their attitudes compared to others as they tend to display greater flexibility and less rigorous processing of persuasive message. People who are not very rigid in their mind set and are willing to exercise flexibility and are open to new thoughts and opinions, change more easily. Advertisers benefit most from such people. More intelligent people may change their attitudes less easily than those with lower

intelligence. The more an individual is equipped with knowledge related to the attitude object, it become more difficult to change their attitudes as the arguments need to be well researched and exhaustive unlike for people who have very little knowledge pertaining to that issue.

LET'S DO

Case Study: Vikas has been associated with a campaign called "Save Paper, Save Trees". He has been working really hard towards sensitizing people in his office regarding this cause and has been urging them to use less paper as much as possible. He has organised various workshops and talks around the issue specifically focussing on why using less and less paper is environment friendly and how if papers are being used then proper recycling must be done so that lesser number of trees are cut to make papers. He has been talking about how wasting paper is harming the environment as in order to make a single sheet of paper, hundreds of trees are cut. He pointed out that if we don't stop cutting trees then our children would not be able to breathe in this toxic environment. He has been often seen mentioning that if we can't do this to save our environment, then we should do this to save our children so that they lead a healthy and long life. Also, in one of the campaigns he even highlighted the amount of money that could be saved annually by going paperless and how by managing everything digitally the employees would be saved from the trouble of maintaining so many files manually.

Keeping the above case study in mind highlight the rational and emotional appeal used by Vikas.

Answer: Vikas has used a rational appeal by focussing on how wasting paper is harmful for environment as for making a single sheet of paper so many trees are cut thus making a logical argument. A logical argument is also made when he stresses how both the employers and the employees would benefit by going paperless. Whereas he makes an emotional appeal when points out that trees must be saved to ensure that our children do not live in a polluted and toxic environment and have a healthy and long life.

INTEXT QUESTIONS 20.2

1. Match the following:

1. Source characteristic	i. logical argument

2. Target characteristic ii. Expertise.

3. Message characteristic iii. openness to new ideas

2. List the three characteristics that influence the process of attitude change.

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20.4 STEREOTYPES, PREJUDICE AND DISCRIMINATION: A SPECIAL CASE OF ATTITUDES

Stereotypes

A stereotype is a belief about a particular ethnic, racial, social or religious group. These beliefs or opinions are by virtue of their group membership. These are category-based schemas or mental frameworks that are over generalized and are not directly verified. For example: a belief that women are emotional, caring, and nurturing; or a belief that men are not emotionally expressive. These are gender stereotypes that are often generalized to the entire category. We often draw inferences on the basis of these stereotypes without any first-hand experience or evidence. For instance: An employer may not consider a female candidate for a leadership position based on the stereotype that females are very emotional. The employer may feel that she may not be able to be assertive and take logical decisions and may get emotionally influenced. It is quite possible that the employer has never encountered any female who has not been able to do justice to the leadership role because of being emotional, yet the employer carries this firm belief. Hence the basis of these strong beliefs may/may not be firsthand experiences but are often stereotypes; like in this case it was the gender stereotype that had already drawn the employer's perception about the female candidate. The inferences that are being drawn in this example are not the result of logical thinking or direct experience but are based on pre-conceived ideas about a particular group. It is important to note that since stereotypes are belief systems, they indicate the cognitive aspect of attitude.

Prejudice and Discrimination

As mentioned above, stereotypes refer to the cognitive component of attitudes. Prejudice on the other hand indicate affective component of attitudes towards a particular group. It refers to the negative emotions towards another individual on the

basis of that individual's membership of a particular group. Often, stereotypes consist of beliefs or cognitions about undesirable characteristics about the target group, and they lead to prejudice which are negative affect like hatred and dislike towards members of specific groups.

Prejudice may also get translated into discrimination, the behavioral component, whereby people behave in a less positive way towards a particular target group compared to another group which they favor. For example, the evil practice of untouchability was rooted in the principle of discrimination on the basis of caste system.

Often these cognitive, affective and behavioral manifestations of attitude in the form of stereotypes, prejudice and discrimination occur together. The preconceived notions or beliefs about a particular social group (stereotypes) often leads to experience of certain affective state (prejudice) as a consequence. This is often reflected in behavioral reaction (discrimination) eventually.

Sources of Stereotypes and Prejudice

Social psychologists have shown that stereotypes and prejudice can be acquired from one or more of the following sources:

1. **Learning:** Like other attitudes, stereotypes and prejudices can also be learned through association, reinforcement , observing others, group or cultural norms and exposure to information that encourages such preconceived notions and negative affect as already discussed in the above sections on sources of attitude formation. For instance stereotypes about a particular religion or caste may be acquired by a child quite early in life through observational learning i.e. if the child witnesses that his/her parents react very strongly against a caste/religion or hold negative opinion towards them then the child would also tend to acquire similar beliefs and affect and later on engage is similar behaviour too. The same effect can be seen based on the principles of operant conditioning as well. For instance if the parents scold the child or express strong disapproval towards the child's friendship with another child belonging to a specific caste/religion then due to a consistent negative reinforcement the child may also start maintaining distance from that child and over time this may get generalised to the other members of that caste of religion.

2. **A strong social identity and tendency towards in-group bias:** Individuals who have a strong sense of social identity and have a very positive attitude towards their own group often hold negative attitudes towards other groups.Thus they often engage in prejudice and discrimination as these negative evaluation

about other groups help them to enhance their positive feelings towards their own group .Their own group becomes the in-group and the other group becomes the out-group for them.

Strategies for Reducing Stereotypes and Prejudice

Prejudice and stereotypes can be reduced by employing various strategies.

Firstly it's important to note that since these attitudes are acquired through learning and exposure to various sources of information such as books, newspapers, advertisements, movies etc. Therefore controlling these sources would be the first step in handling stereotypes and prejudice. Certain strategies that can be employed are:

1. Ensuring that any form of biased and negative beliefs and behavior is not positively reinforced in any form. We have already learnt that attitudes are acquired through instrumental conditioning wherein the behavior and beliefs that are followed by a positive reinforcement get strengthened .Along these lines if children are discouraged the very first time they express stereotyped and prejudiced beliefs, then their tendency to engage in similar behavior in future will get weakened.

2. Ensuring that children as well as adults are exposed to role models that do not encourage any form of stereotypical thoughts and prejudice. If children are exposed to positive role models that display inclusive and non-discriminatory attitude towards members of different social groups then similar attitude gets instilled in them. Also exposure to instances where an individual has been reprimanded or penalized for engaging in prejudiced behavior can also discourage children to follow their footsteps.

3. Narrow social identity on the basis of any form of group affiliation should not be encouraged.

4. De-emphasize in-group-out-group categorization. Individuals should be discouraged to exaggerate boundaries between their social group and other social groups. It is important to emphasize on the similarities that people share across different social groups or categories rather than focusing on the differences.

5. Developing an inclusive and encompassing attitude so that individuals can appreciate and respect the diversity and heterogeneity of various types of social groups.

Also it is very important to note that beyond controlling the sources of attitude formation, already established patterns of thinking and behavior can also be altered

through the following strategies:

- Imparting knowledge and information regarding different social groups or categories to clarify and correct preconceived notions and dysfunctional beliefs about specific target groups.
- Increasing intergroup contact allows for direct communication between the groups thus providing opportunities to develop mutual trust and clarify misconceptions. Moreover, since stereotypes and prejudices are often not based on firsthand/direct experience hence direct contact helps the members of different social groups to discover the qualities of the specific target groups

INTEXT QUESTIONS 20.3

1. Match the following

1.	Prejudice	i.	Behaviour
2.	Discrimination	ii.	cognitions
3.	Stereotypes	iii.	affect

2. List various ways of reducing stereotypes.

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20.5 INTERGROUP CONFLICT

At times, these stereotypes, prejudices and discrimination trigger an intergroup conflict between different social groups. Often the two main sources of intergroup conflict have been identified as "competition for valued material resources" and "competition for social rewards like respect and esteem". A social group that feels disadvantaged and has witnessed prejudice and discriminatory behavior against its members is likely to be driven by both the sources i.e. the members would want to compete for material

gains in order to compensate for the discrimination and subjugation they have experienced and along similar lines would also strive hard to gain respect and status in the society. On the other hand, the other group members who have engaged in prejudiced behavior in the past would strive hard to maintain their status and control and would not like to get the power dynamics change. This power tussle often leads to intergroup conflict.

Factors affecting intergroup conflict

a. **Distrust and a sense of injustice:** At times due to certain existing stereotypes, members of a particular group develop distrust towards the other group members. They start believing that the other group is deliberately trying to harm them and put them at disadvantage, at times clearly ignoring the situational factors that might have contributed to the not so favorable events. For instance: Due to prevalence of gender stereotypes, a female candidate may feel that she wasn't hired for the job because of the general bias against women candidates clearly ignoring the fact that the candidate who was hired had better credentials than her. Such negative and faulty thought processes discussed in the above example often lead to mistrust and conflict.

b. **Faulty Communication related issues:** Lapses in communication create an environment of mistrust leading to conflict like situation. Also, if harsh statements and angry exchanges are made, a tendency to retaliate gets triggered in the receiver which could lead to conflicts.

c. **Egocentrism/Tendency to perceive one's group as perfect:** Trusting and having faith in the group's abilities and decision-making skills is important for group members to be able to continue with their association with the group. However, if this leads to a closed mind set wherein a group develops a tendency to consider only its actions as logical and appropriate while degrading other group's actions and belief systems then a conflict like situation may emerge. Example: Religious or cultural fundamentalism may lead to intergroup conflict as every group has a staunch belief of their religion's superiority over other religions. For instance -History has witnessed that Hitler's belief in the Aryans being the 'master race' had led to severe consequences.

d. **Vulnerability:** At the group level a belief that they are susceptible to some kind of damage or harm evokes a sense of vulnerability, which gets manifested in the form of uncertainty or fear about the future and can lead to intergroup conflict. For example: If a particular social group is being subjected to prejudice and

discrimination then it may trigger a sense of vulnerability and insecurity in the members, paving way for intergroup conflict as a preemptive measure in order to safeguard their interests.

Ways Of Reducing Intergroup Conflict

a. **Increasing inter group contact:** Studies have suggested that increase in the interactions between members belonging to different social groups can help in reducing intergroup conflict and tensions. These interactions have a very significant impact on tension reduction and conflict management particularly when during these exchanges equal status among members is highlighted and opportunities are provided to establish more personalised one to one interaction. Due to these interactions, members of different groups interact with each other and get acquainted with each other's characteristics and patterns of behaviour on the basis of firsthand experience instead of banking on stereotypes and biased thoughts

b. **Decategorization:** One of the major sources of inter group conflict is erecting boundaries between different members by virtue of their group membership. If this boundary gets blurred, then the intensity of conflict can be reduced. This can be achieved by ensuring that the members of different groups engage in intergroup contact involving cooperation and interdependence so that the salience of intergroup boundaries gets reduced.

c. **Recategorization:** Another alternative method is to recategorize the group structures so that the boundaries get redefined and reset. By broadening the scope and highlighting diversity in opinion and unity in the same context, intergroup collaboration can be triggered thus reducing conflict.

d. **Creating Superordinate Goals:** Conflict can also be reduced between competing groups by creating overarching superordinate goals that can tie their interests together rather than driving them apart. Such goals can help in establishing WIN-WIN perspective for both the parties rather than the WIN-LOSE one ensuring that the members of both the groups cooperate and work together for the larger goal and get over their differences and conflict.

WHAT YOU HAVE LEARNT

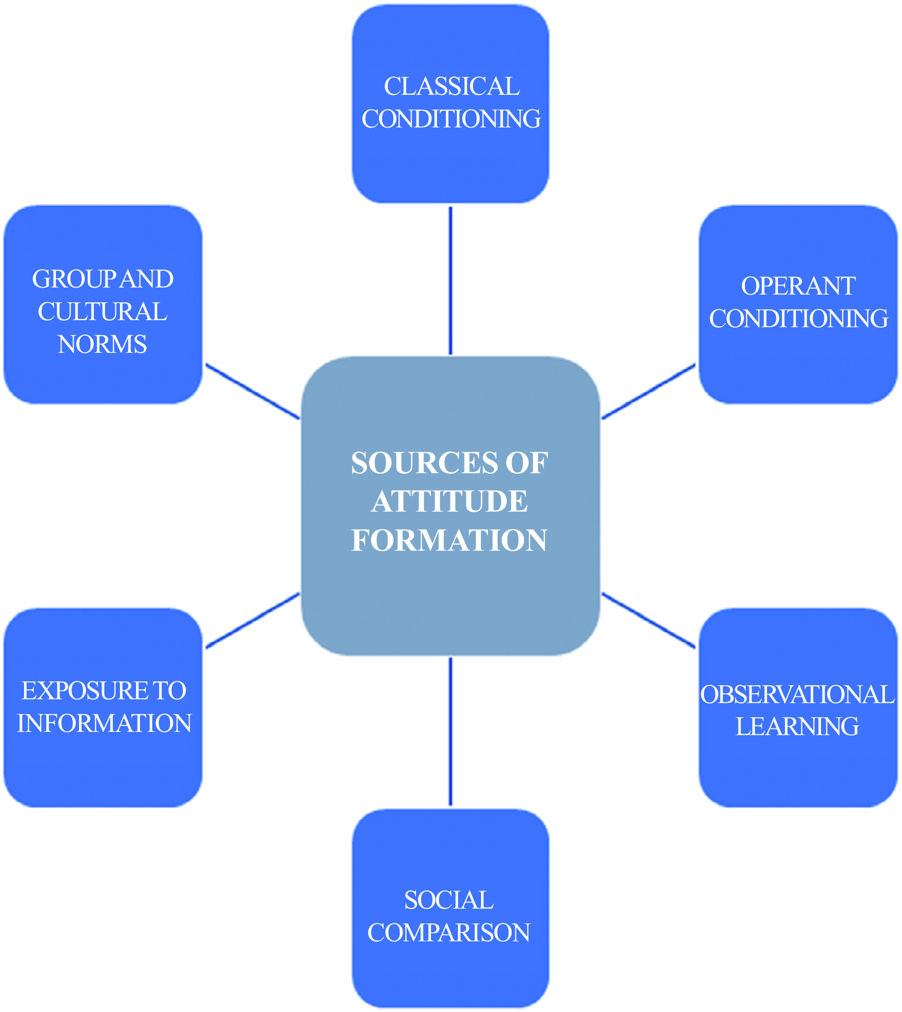
- Components of attitudes

COGNITIVE : The thoughts

AFFECTIVE : The emotions

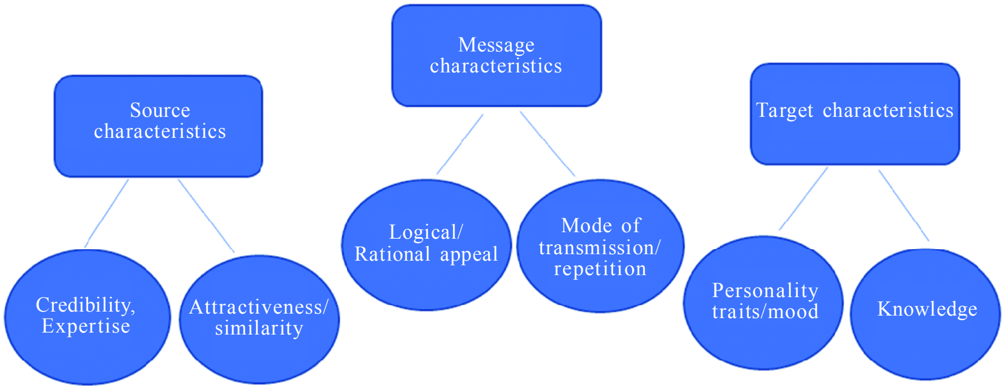
BEHAVIORAL: The overt action

- Sources of attitude formation

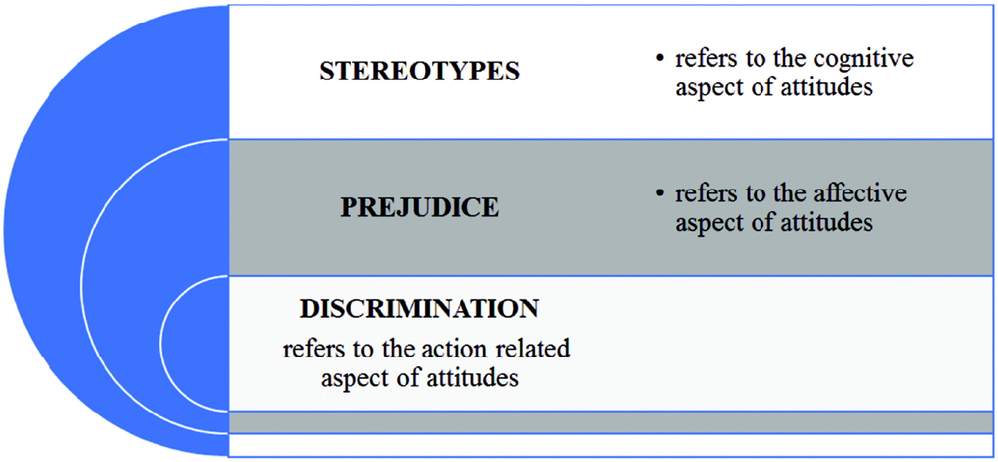


Notes

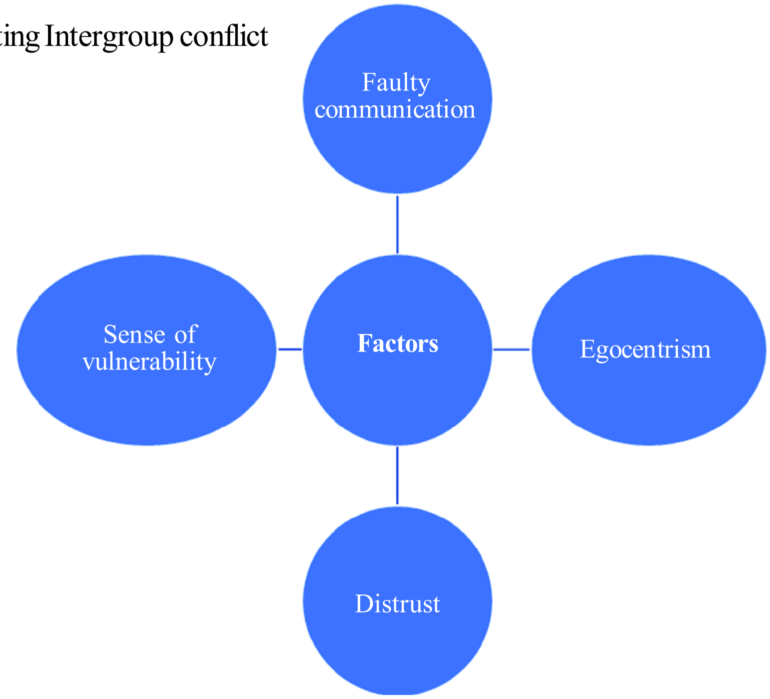
- Factors influencing attitude change



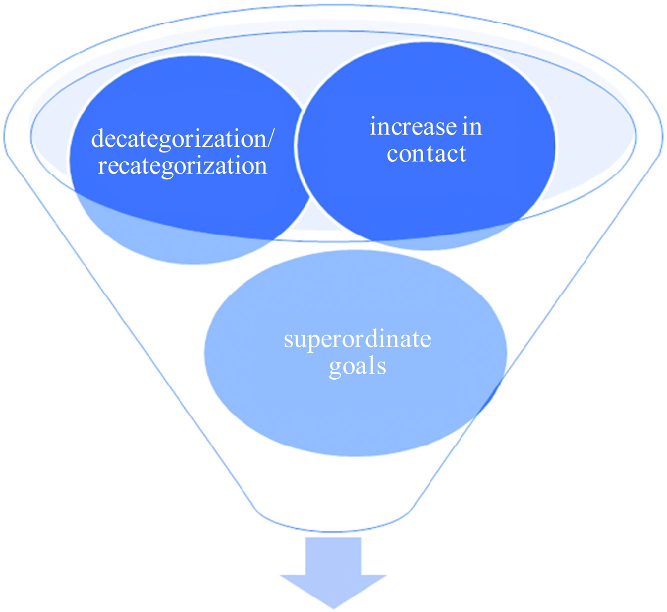
- Stereotypes, Prejudice and Discrimination -A special case of attitudes



- Factors affecting Intergroup conflict



- Ways of reducing intergroup conflict



Ways of reducing intergroup conflcit

TERMINAL QUESTIONS

1. What are the sources of attitude formation?
2. Exaplin the characteristics of source that can impact the process of attitude change?
3. How is the nature of message and the target important for attitude change?
4. How are stereotypes, prejudice and discrimination related with open another.
5. Discuss the ways of resolving intergroup conflict?
6. What are some factors that can contribute to intergroup conflict, and how do they impact the dynamics between different social groups?
7. What are some strategies that can be used to reduce prejudice and stereotypes, both in terms of controlling the sources of attitude formation and altering established patterns of thinking and behaviour?
8. What is the relationship between strong social identity and prejudice, and how does it lead to ingroup bias?
9. What are the three components of an attitude, as described in the A-B-C model?

10. How can attitude be learned or acquired through classical conditioning, operant conditioning, modelling social comparison, group and cultural norms, and exposure to information?

ANSWERS TO INTEXT QUESTIONS

20.1

1. Various sources of attitude formation are:

   a. Classical conditioning b. Instrumental conditioning

   c. Observational learning d. Social comparison

   e. Reference group

2. True and False

   a. False b. False c. False d. True

20.2

1. Match the following

   1. ii.

   2. iii.

   3. i.

2. The three characteristics that influence attitude change are:

   Source characteristics

   Message characteristics

   Target characteristics

20.3

1. Match the following

   1. iii.

   2. ii.

   3. i.

21

PRO SOCIAL BEHAVIOR

Have you ever helped a blind person cross road? Or have you ever shared your food with a dog? Both these acts are examples of prosocial behaviours. Prosocial behaviour refers to a set of positive form of behaviours which may benefit others and facilitate greater cooperation and cohesion in society. Helping is an ethical value taught to us by our elders; it is a valued quality of an individual. Humans are social beings, living in groups, their survival depends on each other. Prosocial behaviour is an important social skill that leads to reciprocity. Just like our evolutionary ancestors – monkeys, they reciprocate to each other by scratching each other's backs; humans also live in a setup where they are dependent on each other. Prosocial behaviour also improves the chances of survival of our own species. We tend to extend help more readily to the members of our own species, and even more so to our kin.

LEARNING OUTCOMES

After studying this lesson, learner :

- describes the various forms of pro-social behavior;
- states how to develop pro-social behavior;
- understands the need to exhibit pro-environmental and pro-social behaviors;
- applies the strategies for promoting pro-environmental behavior; and
- explains the benefits of pro-social and pro-environmental behaviour for individual and society.

Notes

21.1 FORMS OF PROSOCIAL BEHAVIOUR

Prosocial behaviors is "a broad range of actions intended to benefit one or more people other than oneself—behaviors such as helping, comforting, sharing and cooperation."

Broadly, prosocial behavior requires three components: (1) the ability to take the perspective of another person and recognize that they are having a problem; (2) the ability to determine the cause of that problem; and (3) the motivation to help them overcome the problem.

There is no one way of extending help. We might indulge into various forms of helping, depending on the demand of the situation and our intentions.

Major forms of prosocial behaviour are:

1. Helping
2. Sharing
3. Comforting
4. Cooperating
5. Volunteering
6. Donating

21.1.1 Helping

Helping refers to assisting an individual in fulfilling his/her *instrumental need*, where an individual has difficulty completing goal directed behavior. Instrumental need refer to the need to get day to day things done and achieve short and long term goals, for example, getting information we need.

Research states that helping behaviour can begin within the first two years of life. By their second birthday, children have developed the social cognitive skills required to support the recognition of instrumental need and the ability to produce helping behaviors (Dunfield, 2014).

Helping can be further divided into two sub categories, namely, egoistic helping and altruism.

- Egoistic helping refers to acts where people help others not solely for benefiting others but also for personal gain. We might, for example, donate money to a

charity because we want to help, but also because it makes us feel good about ourselves.

- Altruism is helping others while not expecting to have any personal benefits. For example, sharing your lunch with a classmate who forgot his/her lunch box.

Altruism is connected to empathy. Empathy is the ability to feel the plight of the another person by imagining ourselves in this person's tough situation. When we feel empathy for a particular person, we will attempt to help purely for altruistic reasons, that is, regardless of what we have to gain in the process. Empathy motivates the people to reduce other person's distress. If there is low empathy, people will reduce their own distress by escaping from the situation. If there is high empathy, the emotional response corresponds to the feelings of the other person.

21.1.2 Sharing

Sharing can be defined as offering, showing, allowing use of an object, or turn-taking. It requires the ability and willingness to fulfill other's unmet material desire. Examples of sharing include giving some food from your lunchbox to a hungry friend, giving your cricket ball to play for few days.

Research suggests that the ability to identify the need for sharing emerges over the course of the second year of development.

While sharing, a child gives up something tangible to benefit someone else. For preschool-aged children, sharing often involves a physical resource or a tangible object, such as toys, stickers, and food.

21.1.3 Comforting

Comforting requires the ability to understand other's negative emotional state. Alleviating other's emotional distress requires the ability to differentiate and identify the various emotional experiences of others.

Research suggests that necessary emotional understanding is in place in the first year of life, however the ability to explicitly identifying the particular type of distress do not emerge until later toddler hood.

In mature comforting behavior, it is not enough to simply recognize other's negative emotions. It is important to be able to identify the cause of other's emotional state so as to truly understanding their plight and comforting them.

21.1.4 Cooperating

Cooperation refers to working together to achieve goals. In a society, it is important to adjust in accordance with each other for harmonious relationships. Cooperation posits acting together for mutual benefits as opposed to competition where people act selfishly for individual benefits.

A common example of cooperation is cooperative learning where in, students help each other by explaining study material to one another, explaining class lectures, helping one another in difficult topics, mutually take turns in explaining what one has understood better. Cooperative learning is also helpful in diverse classrooms where students of different intellectual levels are taught together. In such classrooms, students learn cooperation and helping behaviour. Cooperative learning is helpful for the students as it leads to higher achievement, increased retention, positive relationships and a wider circle of friends, Greater intrinsic motivation, Higher self-esteem and Greater social support.

Cooperation is important for maintaining social order. It encourages the adherence to societal norms, so that social order is maintained. For example, not playing loud music at night is a form of cooperation.

21.1.5 Volunteering

Volunteering is an altruistic contribution of providing services without any personal gain or monetary reward. For example, getting affiliated to an NGO to help injured street animals, without receiving any payment is form of volunteering.

Volunteering has multiple benefits such as, connecting us to others, it is good for our mind and body, it can advance our career and it brings fun and fulfillment to our life. Volunteering differs from culture to culture and is more common among societies where social involvement is appreciated.

21.1.5 Donating

Donation is to give others in need. It is closely linked to the prosocial behaviour of sharing. Donation can be monetary, of clothes, food, blood, organs and so on. It eases the lives of others and helps them survive.

Donating is a noble act of sharing. It is also beneficial for the donor as it can help bring a meaning to life and also provides a feel good factor. Monetary donation also helps in tax deduction and makes one learn that every bit matters.

In India, The concept of 'Daan' is the practice of cultivating generosity which is emphasized a lot.

DO YOU KNOW

Organ Donation Day is observed every year on 13th of August. Due to lack of awareness, there are myths and fears in peoples' mind about organ donation. The aim of this day is to motivate normal human beings to pledge to donate organs after death, and to spread awareness about the importance of organ donation.

Organ Donation is donating a donor's organs like heart, liver, kidneys, intestines, lungs, and pancreas, after the donor dies, for the purpose of transplanting them into another person who is in need of an organ.

According to a survey in India every year about 500,000 people die because of non-availability of organs, 200,000 people die due to liver disease, and 50,000 people die because of heart disease. Moreover, 150,000 people await a kidney transplant but only 5,000 are able to get successful transplants.

The organ donor can play a big role in saving others' life. The organ of the donor can be transplanted to the patient who needs it urgently.

Facts about Organ Donation

- Anybody can be an organ donor irrespective of their age, caste, religion, community etc
- There is no defined age for donating organs. The decision to donate organs is based on strict medical criteria, not age.
- Tissues such as cornea, heart valves, skin, and bone can be donated in case of natural death but vital organs such as heart, liver, kidneys, intestines, lungs, and pancreas can be donated only in the case of 'brain death'.
- Organs such as the heart, pancreas, liver, kidneys and lungs can be transplanted to those recipients whose organs are failing because it allows many recipients to return to a normal lifestyle.

- Anyone younger than age 18 needs to have the agreement of a parent or guardian to be a donor.
- Having a serious condition like actively spreading cancer, HIV, diabetes, kidney disease, or heart disease can prevent you from donating as a living donor.

NOTTO (National Organ Tissue Transplant Organization) has a website www.notto.nic.in where detailed information about organ donation can be obtained. Another website for the same cause is www.organindia.org

INTEXT QUESTIONS 21.1

State which of the following statements are 'true' and which are 'false?

1) In altruistic helping we expect something in return
2) Cooperation is important for maintaining social order.
3) Blood donation is unhealthy.
4) One should only help humans and not animals.
5) Volunteering can help in choosing a career path.

ACTIVITY

Find the right volunteer work for yourself

Ask yourself the following:

- Would you like to work with adults, children, animals, or remotely from home?
- Do you prefer to work alone or as part of a team?
- Are you better behind the scenes or do you prefer to take a more visible role?
- How much time are you willing to commit?
- What skills can you bring to a volunteer job?
- What causes are important to you?

After answering these questions, you would have a clear picture about the kind of volunteer work is suitable for you.

Mahatma Gandhi once said "The best way to find yourself is to lose yourself in the service of others".

21.2 DEVELOPING PROSOCIAL BEHAVIOUR

There is no right or wrong age to learn prosocial behaviour. However, adolescence is the phase of adjustment and adaptation which is ideal to develop prosocial behaviour. Children tend to start developing prosocial understanding during school, where they learn to share and work in teams. As we grow, we develop moral behaviours and ethics based on our learning through interactions with elders and peers.

To be prosocial doesn't require effort, it is embedded in our value system. Values are basic and fundamental beliefs that guide or motivate attitudes or actions. Few ways of developing prosocial behaviour are:

1. Encouraging prosocial behaviour in children by using techniques such as reinforcement.
2. Experiencing a helper's high, that is, learning to pat your back whenever you indulge in a good deed. One should feel accomplished and hence euphoric after a helping act. You deserve to feel good!
3. Teaching moral behaviours to people around us, especially children and peers.
4. Paying attention to activities going around us. This keeps us alert to help in an emergency situation.
5. Remember you are as responsible as anyone else to help a stranger in need.
6. Be willing to take a chance or risk in order to help others. Government of India gives bravery award to children who have helped other in need while risking their own lives.

ACTIVITY

Tick the prosocial activities you have done from the following:

1. Helped a blind person cross the street/write an exam etc.
2. Helped an old person by spending time with him/her.
3. Gave food to a hungry animal.
4. Shared your clothes with someone.
5. Helped a child study.

Notes

Add five more pro social actions you have ever done in life. If you are unable to recall even five past pro social behaviours, it is time to buckle up and give back to the society. And if you are able to recall, keep up the good work. Don't stop!

21.3 PRO ENVIRONMENT BEHAVIOUR

Prosocial behaviour is incomplete without being compassionate towards mother Earth. We all know about the degrading state of our environment. Be it pollution, deforestation, extinction of animals, plastic menace, oil spills or climate change, acting proactively to save the environment is the need of the hour.

21.3.1 Need to Exhibit Pro Environment Behaviour

Saving the environment will help us enhance our own survival. Currently the pace at which the nature is being destroyed by us, is a cause of concern and needs urgent attention. Seven Biggest Environmental Threats:

1) Climate Change/ Global Warming

Earth's climate is now changing faster than at any point in the history of modern civilization, primarily as a result of human activities. The temperature of Earth is rising due to activities such as deforestation. Climate change is increasing the frequency and intensity of natural events like droughts, wildfires, heat waves, rainstorms, tropical cyclone, and hurricanes which could disrupt food production and cause famines. The industrial activities that our modern civilization depends upon have raised atmospheric carbon dioxide levels. Other causes are burning fossil fuels and intensive agriculture.

2) Species Extinction and Biodiversity Loss

Intensive agriculture, unsustainable fishing, wildlife poaching, habitat degradation and destruction, acid rain, and climate change are threatening thousands of species. Humans are clearing forests for raising livestock, agriculture or establishing industries as a result of which animals are losing their home. Every species has a role to play in the environment, and extinction of even one of them disrupts the food chain and overall balance of the ecosystem.

3) Air and Water pollution

There are various types of pollution, but air and water pollution have most alarming consequences. Air pollution is caused by industries, automobiles and waste burning. Water pollution is at a rise due to plastic pollution. The Global

Risks Report 2018 indicates that plastic pollution has increased so much that micro-plastics can be found in 83% of tap-water in the world. Chemical pollution is caused by industries and fertilizers used in agriculture, when these chemicals are dumped in lakes, rivers and ponds.

4) Water Crisis

Though the Earth's surface is covered 70% by water, only 2.5% is fresh water that people, plants and animals can use to survive. Water shortage is occurring due to careless overuse. People are extracting water from groundwater-reservoirs and rivers, and demand is growing. Expanding agriculture alone uses 70% of this resource. Large lakes are drying up which impacts not just people but also vegetation and wildlife.

5) Natural Resources Drain

Growing population places more demands on the earth's natural resources year after year. A prime example of higher consumption demands can be found in the fishery industry where 63% the world's marine life is over-fished with few to no renewable methods in place.

6) Deforestation

Deforestation disrupts the natural balance of ecological systems. It is a major cause for extinction of various species of flora and fauna as forests are home to 80% of animals. It increases soil erosion leading to landslides. It also is a major contributor to global warming as trees are the only source of oxygen.

7) Soil Degradation

Soil degradation results due to soil erosion, soil compaction and application of agricultural chemicals. Erosion of soil can happen due to wind or water, when the protective cover of forests and other vegetation is removed, and the topsoil is lost. Soil compaction occurs due to over-grazing and destruction of the soil structure due to heavy tillage that is a characteristic part of industrial agriculture.

It decreases the ability of the land to absorb and hold rainfall, which can cause soil drought and a decrease in recharge of groundwater reservoirs and rivers, affecting the hydrology of an area. Further, the soil gets deposited as sediments downstream, excessive quantities of which can be polluting and harmful to fish and other aquatic life.

Notes

21.3.2 Pro Environment Behaviours and Actions

What is required is that at least all of us become aware of the need to be environment friendly and contribute in whatever ways possible.

There is only one Earth and we cannot afford to lose it. There are many ways in which we can contribute to a healthy environment. The threats to the environment, as given in section 21.3.1, can be reduced by our little actions.

1) **Plant Trees :** Planting trees reduces air pollution by releasing oxygen. Forest cover is important to protect Earth. Wherever we see a vacant land where trees can be planted, do not hesitate. Take help of an adult and plant a tree, nurture it and see it bloom.

2) **Help reduce air pollution :** Do not burst crackers – Carbon fumes that are released by burning crackers are highly hazardous for the environment. The gases released in the atmosphere harm the ozone lining of Earth, in turn causing climate change. Find a substitute to crackers for celebrations – enjoying at the expense of Earth's health should not be acceptable to you. Even the government is trying to curb pollution by policies such as odd-even traffic movement.

3) **Switch of the lights :** Electricity is mostly produced by burning coal, which in turn contributes to air pollution. By conserving electricity we can reduce the amount of the coal being burnt. Thus, switching of lights and fans when not required, turning off the TV button, removing phone chargers from sockets when not in use, and not leaving the refrigerator doors open for long, among other things can help curb air pollution.

4) **Save Water :**Water is a nonrenewable resource. Overuse of water can lead to depletion of the water table which can lead to water crisis. Further, water is purified for human consumption which requires a lot of resources such as coal burning. Therefore it is important to save water while bathing, brushing teeth, and cleaning utensils. We should also mind that water is not wasted in public places.

5) **Say no to Plastic :** Plastic is choking our planet. It is non bio-degradable and thus once used, stays on Earth for thousands of years. Plastic is making the entire planet a dust bin, including our oceans. It is consumed by the wildlife and results in a large number of diseases. We should avoid using disposable plates, spoons, straws, glasses made of plastic, also known as one time use plastic products. The water bottles that we often buy without giving a second thought are one of the most common form of plastic waste. Hence it is in our best interest to avoid plastic products as much as possible.

6) **Reduce meat consumption :**Meat requires raising of livestock such as goats, buffaloes and pigs which in turn requires pastures for grazing, leading to ranching, that is, clearing of forests for making pastures. Meat is one of the most common reason for deforestation. Also it requires gallons of water which impacts the water table. If the demand for meat will reduce, the supply will also reduce, as a result the meat industry will lead to lesser deforestation and lesser depletion of valuable resources like water.

7) **Don't waste food :** Just like meat, agriculture also require huge amount of space. With increasing demand for food, the land for agriculture has to be increased through deforestation, which means cutting through forests for land. We can reduce the effect of deforestation by reducing the food wastage. Food is directly proportional to clearing of forests, thus, more food we consume, more is the deforestation.

8) **Save Wildlife :** Deforestation is a common cause for habitat loss and wildlife extinction. Every species has a role to play in the ecosystem. And extinction of even one species can impact our survival on this planet. We need to be sensitive towards the wild life and their needs. Help animals, don't abuse them. They have an equal right on earth!

These are just few ways in which we can contribute to a healthy environment. There are many more ways such as using family planning methods to control population explosion, switching off the car while waiting on traffic signal and making others learn the importance of such pro-environment action.

Prosocial behaviour is not exclusively in helping fellow humans, but also in helping our planet and other species survive.

INTEXT QUESTIONS 21.2

Match the following:

i.	Cutting Trees	1.	Natural Resource Drain
ii.	Bursting Crackers	2.	Water Crisis
iii.	Over Fishing	3.	Deforestation
iv.	Leaving the tap running	4.	Species Extinction
v.	Hunting/Poaching	5.	Air Pollution

Multiple Choice Questions

Global Warming is:

a) Increase in temperature of Earth

b) Decrease in Temperature of Earth

c) No change in temperature of Earth

d) A healthy phenomenon

ACTIVITY

First activity - Among the Pro environment behaviours and actions explained in section 21.3.2, select at least 2 actions you find most important. Explain their importance to a close friend. You have to convince your friend!

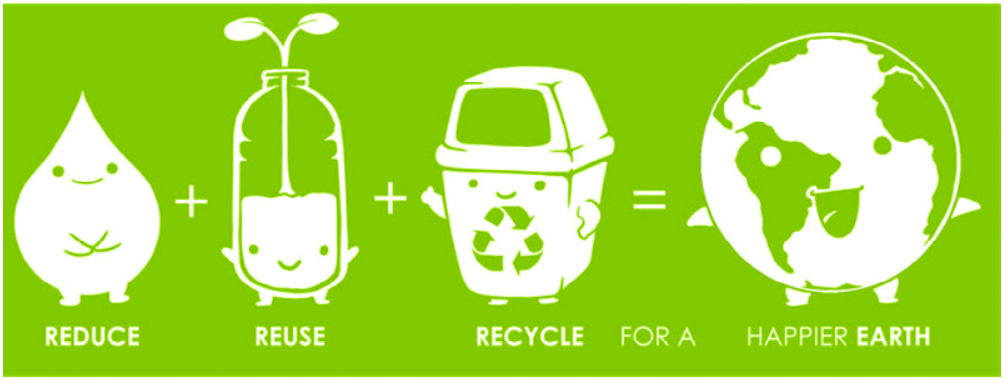
Second Activity – Time to Practice what we preach. Practice the 2 actions selected for the above activity for atleast a week's time. For instance, if you choose water conservation, close any running tap you notice, do not keep the tap running while brushing or washing utensils, do not waste drinking water and so on.

Let's contribute to a healthy environment!

DO YOU KNOW

There are three Rs of sustainability.

- **Reduce:** To use fewer resources in the first place. It takes resources to manufacture, transport, and dispose of products, so reduction minimizes the use of new resources.
- **Reuse:**Use materials more than once in their original form instead of throwing them away after each use. Reuse keeps new resources from being used for a while longer, and old resources from entering the waste stream.
- **Recycle:** Converting waste materials into new products, changing them from their original form by physical and chemical processes. Although recycling uses energy, it helps to prevent new resources from being used and old materials from entering the waste stream.



For example, Plastic Menace can be partially handled by the three Rs.

Notes

- We should REDUCE buying plastic products such as disposable utensils and mineral water bottles.
- Once bought, the plastic products should be REUSED rather than being thrown immediately.
- At the time of disposing the plastic products, one should be careful to throw them in dustbins where they have a chance of being RECYCLED. If littered around, these harmful plastic products get mixed with soil or get dumped in water bodies.

21.4 BENEFITS OF PRO SOCIAL AND PRO ENVIRONMENT BEHAVIOR

Humans are social creatures, spending much of their lives in the company of others and these social connections are the greatest sources of human well-being.

Prosocial behaviours have both individual and social benefits. The act of helping can give us immediate happiness (individual benefit) as well as improve our social relationships in various realms of life (social benefits).

21.4.1 Individual Benefits

A large body of research has found that prosocial actions and pro-environment actions improve wellbeing of the giver. Some of the research findings are stated below:

- People who volunteer more frequently are both healthier and happier than those who do not volunteer.
- Individuals who volunteer report higher life satisfaction and lower depression than those who do not volunteer
- Individuals who donate money to charity report higher levels of life satisfaction, than those who do not
- Pro environment behaviour improves present and future subjective wellbeing of the individual.

21.4.2 Social Benefits

Prosocial behaviours help us develop social connections, also known as social capital. Likewise, Pro-environment behaviours bring like-minded people, seeking better environment, together. Research has proven that the resulting social capital helps us lead a smooth life. Some of the research findings are stated below:

- Meaningful connections with others lead to happiness.
- Individuals with larger and more widely used networks provide more positive life evaluations.
- Communities with high social capital have been documented to recover more quickly from natural disasters, such as the Tokyo earthquake of 1923 and the 2004 tsunami in southern India.
- Strong social connections are also related to good physical health. Researches state that building social ties helps people achieve better health status, or speedier recovery times.

INTEXT QUESTIONS 21.3

1) Outline two individual and social benefits of Pro social and Pro environment behavior.

ACTIVITY

Make a diary, on each page make two columns, one for activity and the other for feelings. While doing activity 2 among activities 21.3, at the end of each day fill the columns of the diary stating all the environment friendly actions you undertook on that day and how it felt.

The beautiful emotions that you will experience after indulging into pro-environment actions would be a wonderful and help you achieve positive mood.

WHAT YOU HAVE LEARNT

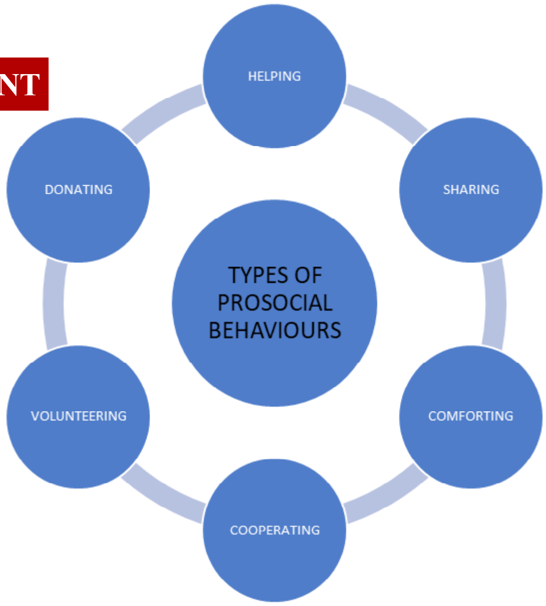


Fig 1: Types of Prosocial Behaviours

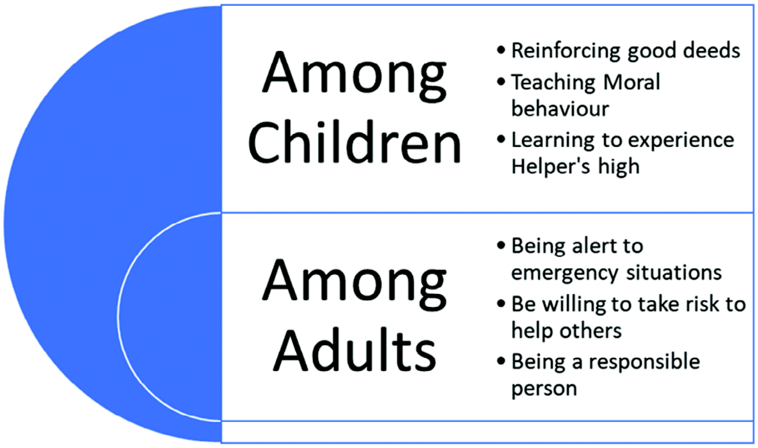


Fig. 2 Developing Prosocial Behaviour among children and adults

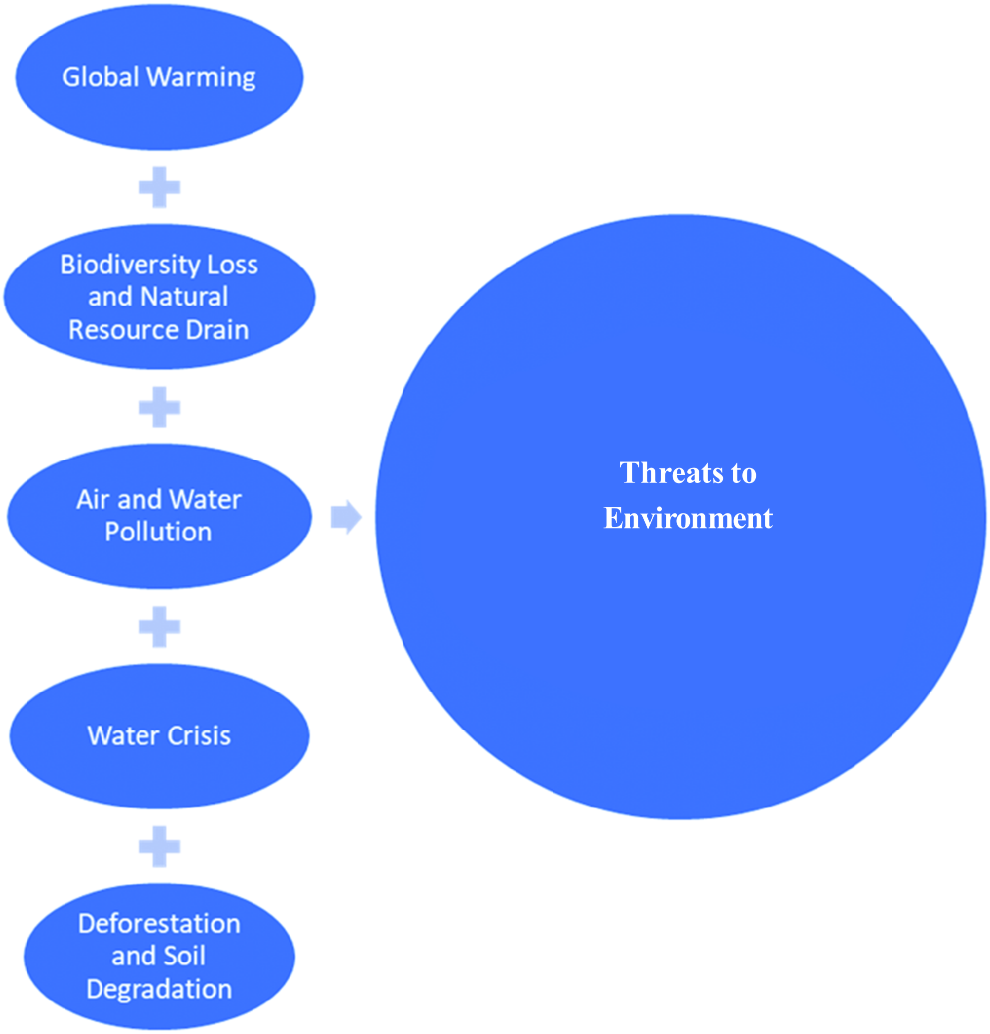


Fig. 3 Biggest Environmental Threats

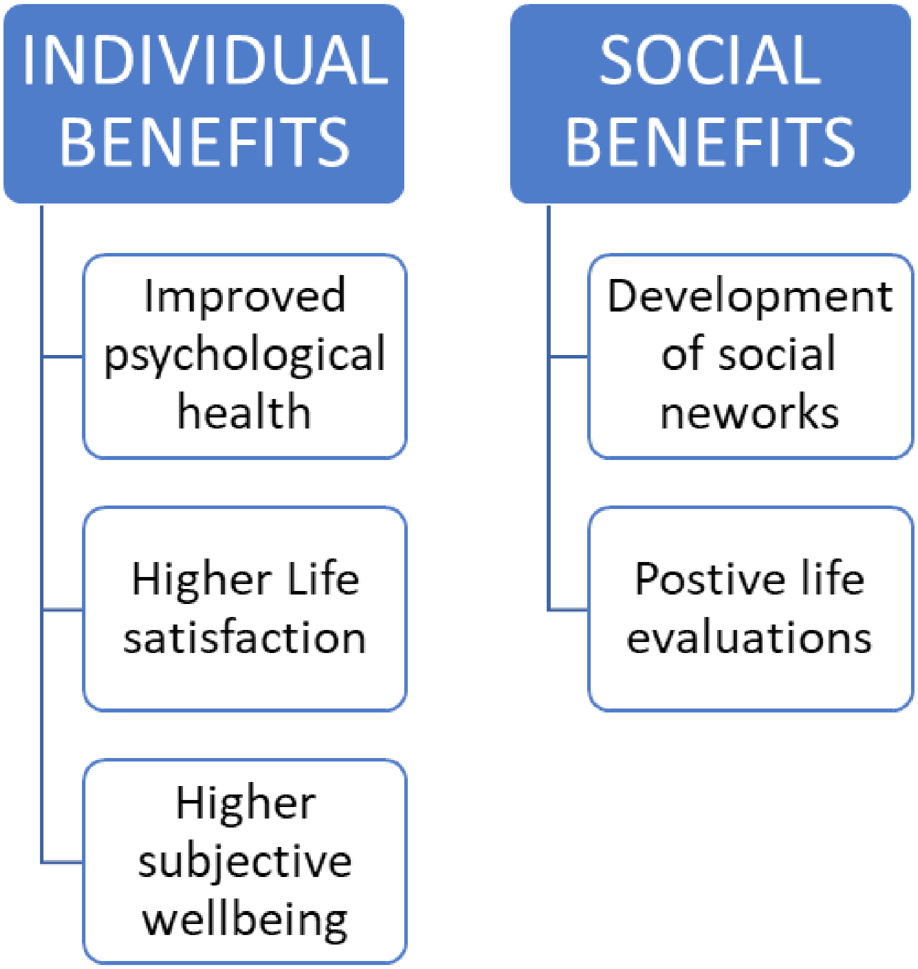


Fig. 4 Benefits for us of Prosocial behaviours and Pro-environment behaviours

TERMINAL QUESTIONS

1) Define prosocial behaviour.

2) What are the various types of prosocial behaviours?

3) Can we develop pro social behaviour? If yes, how?

4) Why is there a need for pro-environment behaviours?

5) How can we contribute to a healthy environment? Explain with examples.

6) What are the benefits of pro social and pro-environment behaviours for an individual?

7) Outline the three Rs of sustainability.

8) Identify the different environmental threats.

9) How does pro social behaviour of cooperating is important for maintaining social order.

10) What will happen to the society and environment if no one develops and acquire prosocial behaviour?

ANSWERS TO INTEXT QUESTIONS

21.1

1) False

2) True

2) False

2) False

2) True

21.2

I Match the following

i) 3

ii) 5

iii) 1

iv) 2

and v) 4

II Global warming is

a) Increase in temperature of Earth

21.3

INDIVIDUAL BENEFITS

- Individuals who volunteer report higher life satisfaction and lower depression than those who do not volunteer
- Individuals who donate money to charity report higher levels of life satisfaction, than those who do not

SOCIAL BENEFITS

- Individuals with larger and more widely used networks provide more positive life evaluations.
- Communities with high social capital have been documented to recover more quickly from natural disasters, such as the Tokyo earthquake of 1923 and the 2004 tsunami in southern India

MODULE -6

Health and Well-being

This module aims at developing and understanding about the concepts of health and well being. It explains the barriers in the achievement of positive mental health and well being leading to holistic development. It also explains the concepts of stress, how to cope with it, mental health problems and concerns and positive interventions for health and well being.

22. Coping with Stress
23. Mental Health Problems
24. Psychology for holistic development

22

COPING WITH STRESS

Sneha's class 12 examinations were scheduled on 4^{th} of April. She went to her home town to attend her cousin's wedding on 28^{th} February. On returning back her friend told her that the examinations have been preponed to 15^{th} of March. At first she was very worried but she realized that worrying will only lead to a waste of time. Without wasting time she worked so hard that she passed the exams with the top grades in the class.

Have you ever come across a situation where you performed well under stress? Many of us might have undergone various situations in life where we were surprised to perform much better than what we expected. It can be anything extending from passing a difficult examination with good grades, winning a tough competition, cracking competitive examination or accomplishing targets in the job. However, this is not true for everyone. A lot of people find it difficult to deal with stressful situations on a day today basis. For example, although in the above example Sneha could perform better in the examination but she might find it difficult to deal with some other life situation.

There are many other examples from our daily life where different situations like managing home and office, completing an important assignment , competing in the examination, dealing with a strict boss in the office, facing traffic, dealing with people in the family/ neighbourhood and many other situations become a source of stress. Stress can hamper an individual's normal functioning. It is generally seen that something which is stressful for one person might act as a motivator for the other person. The difference in the effects of stress depends upon the nature and kind of situation as well as upon a person's ability to look up at the stress provoking situations in a positive or negative manner. In this lesson we shall learn about the nature of stress and the various ways to deal with stress.

Notes

LEARNING OUTCOMES

After studying this lesson, learner :

- describes the meaning and nature of stress;
- recognizes the physical, mental, emotional and behavioural signs and symptoms of stress;
- analyses the various factors leading to stress;
- elucidates the effects of stress on physical and mental health; and
- Applies the ways and strategies to cope with stress.

22.1 MEANING AND NATURE OF STRESS

Hans Seyle has defined stress as "the non-specific response of the body to any demand for change". Stress is an indispensable part of human life. It makes life challenging and interesting.

Stress can be understood with an example of elasticity. It happens that the magnitude of the external force or stress makes proportional amount of deformation or strain in a malleable metal. The malleable metal as a result of its property resumes its property after having been compressed. In the same manner stress can be defined as a psychological pain where small amounts of stress is necessary to improve performance, whereas, negative stress can hamper one's day to day functioning. The experience of stress depends upon an individual's ability to perceive the situation as challenging or threatening depending upon the resources available to deal with the situation. Stress can be caused by a number of reasons which can be internal or external to an individual. Such stimulus or an event that causes stress in an individual is known as a stressor. Let us know about these stressors.

22.1.1 Daily Hassles Stress

This kind of stress results from too many minor sources of stress. It can range from making meals to reaching the office on time, dealing with traffic; attending guests at home, shopping and so on. These daily hassles take a toll on an individual's mental and physical health and affects the psychological well being.

22.1.2 Major Life Events Stress

Apart from the daily hassles there are major life events that cause stress to the individuals. Such stresses can be related to the death of a loved one, divorce, and transfer from one place to another, losing a job etc. Major life events exert adverse effects on the health of an individual.

22.1.3 Job Stress

The stress related to the working environment adversely affects the physical and mental wellbeing of an individual. Job stress can be related to the work pressure, salary structure, and relationship with colleagues, working conditions, relationship with boss, leave policy and many more.

22.1.4 Catastrophic Events

This refers to those situations that are beyond the control of a person. Such stressors might include devastation after wars, earthquakes, tsunamis etc. causing individuals to lose and would have devastating effects on individuals.

These are some of the different stressors that disrupt the physical and mental well being of an individual.

Everyone experiences stress at one or the other point in life. As life goes on we try to adjust ourselves.

However, stress need not be negative always. There are basically two types of stress:-

i) Positive stress

Just like Sneha who passed her examination with good grades despite less time for preparation, it happens that sometimes stress leads to unexpected outcomes. This occurs when we take charge of the stressful situation and take it as a challenge. This further motivates us to counter the situation effectively. It is also known as **Eustress**.

ii) Negative stress or Distress

Rahul has joined a new job; however, he is finding it difficult to manage with the work pressure. Workload is hampering his performance at work. He also remains irritated with people around him.

Notes

This kind of stress is also known as **Negative stress or Distress.** This occurs when we lose our strength to work on stressful situations or face the challenge. Such stress adversely affects the physical and mental wellbeing of an individual.

ACTIVITY

Think about a stressful situation in your life where you enjoyed working over the task. Write about your experience of dealing with the situation in 250 words.

INTEXT QUESTIONS 22.1

1. Briefly discuss the different types of stressors.
2. Positive aspect of stress is called ____________ and the negative aspect of stress is called __________________ .
3. What are catastrophic life events and how can they create stress among individuals?

22.2 EFFECTS OF STRESS ON AN INDIVIDUAL

22.2.1 Physiological Reactions

Priyanka had severe toothache. Her dentist advised her for tooth extraction. On the previous day of surgery she reported of having severe headache. The medical examination revealed no signs of physical cause behind headache.

Stress can cause many physiological reactions such as

- Dryness of throat or mouth
- Low energy level
- Indigestion
- Rapid pounding of heart
- Lack of sleep
- Tense muscles frequent cold

These responses may result from the weakened immune system due to continuous exposure to stress.

22.2.2 Cognitive Reactions

Piyush has to appear for his final board examination of class 12. However, as the date of examinations is approaching he is not able to concentrate on his studies, he seems unable to remember what he has learnt.

Stress can also lead to some of the cognitive symptoms.

- Poor concentration
- Forgetfulness
- Confusion
- Poor judgement
- Negativity in thoughts
- Racing thoughts

22.2.3 Behavioural Reactions

Shreyas's parents compares him with his elder brother and puts pressure on him to be as good as his elder brother is in sports and studies. He often complains with his friends of being under pressure always to match up with his brother's standards. Recently he has started being abusive to his brother.

Many of the stressors in the environment affect the way the person behaves

- Procrastination
- Unhealthy eating habits
- Substance abuse
- Crying
- Hitting
- Suicidal talk or behaviour
- Anti-social behaviour

- Avoidance behaviour

After completing her studies Kirti has been applying for jobs continuously. She has always been a competent student throughout her life and everyone praises her for her behaviour with others too. However, she is not able to get an appropriate job for her. Her parents are observing that she has started getting angry over small little things. She also remains very nervous and anxious whenever she gets an interview call.

22.2.4 Affective Reactions

- Anxiety
- Depression
- Irritability
- Frustration
- Nervousness
- Hopelessness

22.3 FACTORS LEADING TO STRESS

Ruhi is a confident and intelligent girl and has been a top scorer in her class. However, to everyone's surprise she is finding it really difficult to face class 10 Board examination. Her teacher found that she is feeling stressed because her mother is hospitalized and she has to take care of her younger sister and manage things at home.

There are various factors in the life of a person that can lead to stress. These factors can be categorized into **internal and external** pressures or situation that mount upon an individual and results in stress.

22.3.1 External factors

i) **Catastrophic events** like earthquake, tsunami, cyclone,war etc.,

ii) **Prevailing situations** around an individual like poor health of family members, financial problems, unhealthy family environment, divorce, death of a loved one etc.

iii) **Environment of an individual** like background noise, pollution, overcrowding, job related factors such as workload or work underload, relationship with colleagues and boss, unhealthy relationship with the neighbours etc.

iv) **Culture stress:** this may refer to the culture shock that one may experience as a result of adapting to new cultures, for example, when a person from rural background has to make an adjustment in the

22.3.2 Internal factors

i) Personality factors of an individual

Arnab is a renowned chef and runs his own restaurant. Still he is not able to retain his employees for a long time. His team members often complains that in order to present a perfect dish he himself comes under so much stress that he starts yelling and insulting his employees for small little things. People who are highly motivated, competitive and perfectionists are more prone to stress.

ii) Locus of control

Priya and Rashmi appeared for competitive examination after class 12. Although both of them were unable to clear the exam in the first attempt, Priya believed that since the paper was quite tough and out of syllabus, she got stressed and lost all her hopes. On the other hand Rashmi realized that she needs to put in extra effort and change her strategy towards preparation. As a result she qualified the examination in the next chance.

Experience of stress also depends upon the degree to which people believe that they have control over the situations around them. People who have an internal locus of control take charge of the events and situations happening around them and believe in a sense of control. However, those with external locus of control believe that such events and situations are beyond their control. Such individuals are likely to feel more stress as compared to the ones with internal locus of control.

iii) Attitude

After losing his job Arpit never lost hope and kept working on finding better jobs. After waiting for six months he got a job in a very good organization. Individuals with an optimistic attitude believe that good things will happen to them as compared to those with pessimists' feelings. This is mainly because

optimism is related with dedication and determination which help to adapt with stressors more effectively as compared to pessimists.

iv) Poor health

Think of a situation in your life where your health became a reason for your stress. If an individual is not in a good mental or physical health then it also leads to the experience of stress of an individual.

Notes

INTEXT QUESTIONS 22.2

1. Match the following

(a) Physiological response to stress	(i) impaired decision making
(b) Cognitive response to stress	(ii) crying
(c) Affective response to stress	(iii) irritability and anxiety
(d) Behavioural response to stress	(iv) trembling and tense muscles

2. How can noise acts as a stressor to an individual?

3. a) Highly motivated people are more prone to stress. True/False

   b) People with internal locus of control are likely to experience more stress as compared to people with external locus of control. True/False

4. How can poor health of family member create stress?

5. Discuss how the attitude of an individual contributes to the experience of stress.

22.3 EFFECTS OF STRESS ON PHYSICAL AND MENTAL HEALTH OF AN INDIVIDUAL

Up till now you may be able to understand the effects of stress on an individual. However, stress can have far reaching effects on individuals at physical and mental levels. In this section we will discuss the effects of stress on the physical and mental level of an individual.

Hans Seyle proposed a three stage model of stress to explain the physiological changes that take place in the body as a result of stress. It was popularly known as **General Adaptation Syndrome(GAS).**

Notes

General Adaption Syndrome

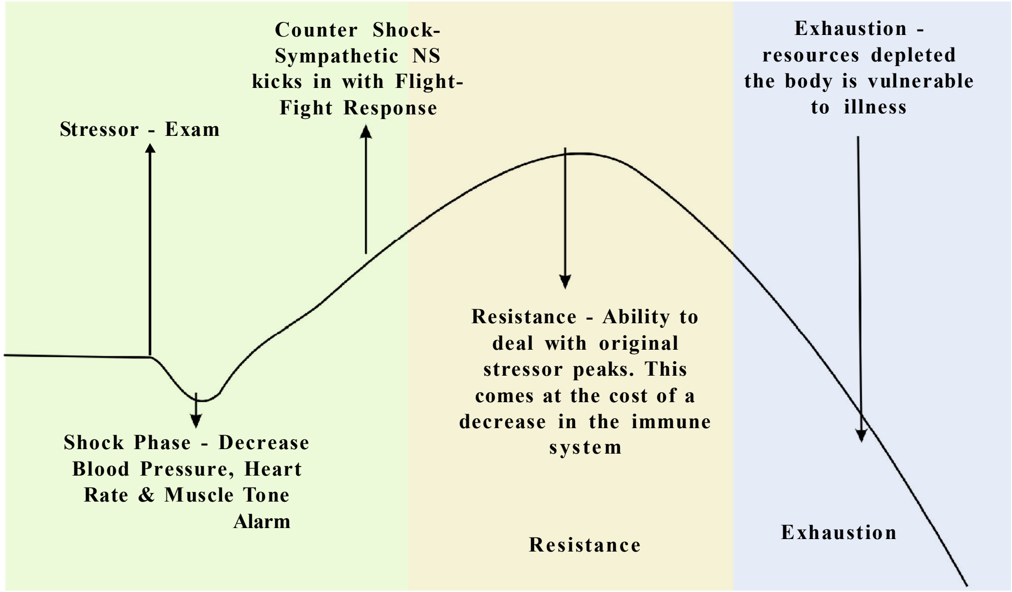


Figure 22.1 General Adaption Syndrome

On looking at the figure you will find that there are three stages of the physiological response to stress.

Let us take up the case of a learner whose term end examinations are approaching and the learner is not prepared. So there will be three stages of reaction to stress due to lack of preparation.

Stage 1

Alarm:-This means that the stressor which is 'term end examination' will ring an alarm in the body or come as a shock to the learner. During this phase the blood pressure, heart rate and muscle tone of the learner may be affected. This is a natural reaction to stress provoking situations and prepares the learner to either flee or fight the situation. Can you think how this happens? Let us go back to lesson number 2 and try to understand the role of ANS in alarm reaction. During the alarm reaction the sympathetic branch of the ANS is activated and releases adrenaline and produces cortisol to prepare the body for action (flee or fight).

Autonomic Nervous System

1. **Sympathetic Division** (Mobilises body system during activity 'fight or flight'
2. **Parasympathetic division**(Calm body to conserve and maintain energy)

Figure 22.2

Stage 2

Resistance: After fight or flight responses the body begins to repair itself with the help of parasympathetic system and tries to maintain homeostasis.

Stage 3

Exhaustion stage: If the stressor continues to be present even after the resistance stage then this leads to exhaustion stage. The continuous effort of the body's ability to deal with stress provoking situation depletes its ability to fight stress. This is regarded as dangerous to one's health as it weakens the immune system and the organism becomes more vulnerable to stress induced illness.

Think about the last time during a stressed situation you caught cough, cold or a disturbed stomach

INTEXT QUESTIONS 22.3

1. Prolonged stress adversely affects the immune system of the body. True/False
2. Parasympathetic division is related to the fight or flight response to stress. True/False
3. Sympathetic division conserves and maintains energy. True/False

22.4 STRATEGIES TO DEAL WITH STRESS

In the previous sections we discussed the various factors that are responsible for stress. We also talked about the various stress provoking factors and their effect on the physical and psychological wellbeing of an individual.

However, most of the people in the world try to find out solutions to their problems. Nobody wants to be under stress and go through its after effects. Do you ever realize that when you are under stress you try to relieve yourself by talking to others? We try a lot of coping strategies to deal with stress. Let us discuss a few of the coping strategies with examples.

22.4.1 Problem Focused Coping

Ramesh had to sit in the final board examination and he realized that he was not able to do well in one of his courses and he was feeling stressed. However, he decided to find

out and make use of the available resources like video lectures, internet resources, books and extra help from the tutor to prepare for the course. To everyone's surprise he was able to score the highest marks in that course after such a preparation.

This kind of coping strategy which Ramesh used in the above example is known as **Problem Focused Coping** strategy in which an individual tries to work on the problem to find a solution and get relieved.

ACTIVITY

Create a scenario where you find that your friend is not able to continue with her studies because of financial constraints. Develop a problem focused coping strategy that can be helpful in such a situation.

22.4.2 Emotion Focused Coping

Pratigya spent a lot of time preparing to get selected for the women's hockey team. However, she was not selected. After the result was declared she decided to go out for a vacation and spend some time at her grandmother's place in Shimla.

Do you think it is possible for anyone to be the winner every time? It might be for some but not for all. In such situations when as individuals we find that the situations or circumstances are not under our control we tend to take breaks from the situations. This is what Pratigya did in the above example. This kind of coping strategy is known as **Emotion Focused** coping.

Sometimes in emotion focused coping people may delay the process of resolving the issue at hand.

For example, people may delay the root canal treatment because of the pain associated with it.

This kind of emotion focused coping is not beneficial for anyone to deal with the stress provoking situations.

22.4.3 Cognitive Response to Stress

Mohan was diagnosed with Asthma at a very young age. He was under stress realizing that asthma might refrain him from doing a lot of things that he used to do. However, he decided to seek information about the disease through different resources like case

studies, clinical reports, doctors and through available online resources. This provided him with rich information about the dos and don’ts of the disease. He now feels less stressed as he knows how to effectively live with it.

Notes

Do you sometimes look for information to deal with the problem which you are facing?

If we try to gather information about our problems then it generally gives us a clear picture of the problem and also tells us the strategies that helps in effective dealing. This is also known as information seeking approach of stress reduction. If you are facing any problem at a given moment try to help yourself by gathering information about it. The problems may range from daily hassles to examination stress to major issues in life but gaining knowledge helps to empower the individual in effective dealing.

22.4.4 Social Support

Geeta hails from an economically backward family. She always wanted to financially support her family. She did a cutting and tailoring course from distance learning. Now she wants to open her own boutique. She realized that she lacks funds for the purpose and is under stress. Her tutor told her that she can approach various government organizations to financially support her in setting up her boutique. She also sought help from her relatives in finding a proper place for her boutique.

Do you also share your problems with your family, friends or with anyone whom you trust will be supportive? The coping strategy which is discussed in the above example is known as seeking **Social Support.** This is another coping strategy where an individual tries to seek help from the immediate environment to deal with stressful situations.

22.5 TECHNIQUES OF STRESS MANAGEMENT

Have you ever noticed that when under stress lots of negative thoughts starts coming in our mind? For example, what will happen if I fail in the examination, what will happen if I lose my job etc. In such situations when negative thoughts start pouring in our mind it is good to use cognitive strategies to alter the stress provoking thoughts.

There are various ways in which this alteration of thoughts can be done and **Thought Stopping** is one among them.

Notes

22.5.1 Thought Stopping

means that whenever unnecessary thoughts creeps in mind just **strongly** say say **'STOP'.** This helps in getting the thought out of the mind of an individual. However, this technique has to be practiced repeatedly to keep the stress provoking thought away from the mind of the individual.

Another cognitive technique to alter the stress provoking thought is to modify the stress provoking thought and rate it on a 100 point scale with.Let us do one exercise to understand this technique.In the below given example there are two different thoughts for the same situation. The situation is **'I am late for the interview'**

The thoughts can be;-

1. **I will not be allowed to sit for the interview. I will lose the opportunity to get this job and my one year will be wasted on what I will do.**

Rate your thoughts on a 1-100 point scale for this thought.

I will not be allowed to face the interview. So what I will try to convince them is that due to unexpected traffic jams, the roads were closed and I could not reach on time. I may or may not be allowed to appear for the interview. However, feeling sad about it will not be the solution. This is not the end of my life. I will work even harder and will have better opportunities.

Rate your thought on a 1-100 point scale.Considering the above example, what do you think is relaxing? Apparently the second.There are times when we are faced with a lot of negative situations in our lives but how we think about the situation changes the way we feel about it.

22.5.2 Time Management

There are 24 hours in a day for everyone. Some individuals are able to effectively manage their time. The history tells examples of great leaders who could succeed in their lives because they knew how to effectively manage and utilize these 24 hours in a day. It happens with many of us when under stress we feel that time is running too fast.

The biggest hurdle to time management is procrastination. It happens when we delay important assignments and waste on less important things. You might have come across a situation where you know that submitting an assignment is more important than going out with friends, however, you still chose to go out with friends and that results in

feeling helpless when you know that not submitting might end up you with losing grades in examination. We may procrastinate for a number of reasons like keep on thinking and planning and never execute the plan to finish the task, or we may procrastinate because we feel that we might not be able to perform the task and thus we do not make an effort, or we procrastinate because we think that we will do it perfectly. There can be endless reasons for procrastination but it results in stress when we are required to face the situation that we have been delaying. Effective time management requires planning and prioritizing. Let us understand how?

i) Planning: It is very important to plan ahead for what is to be done. Make a list of activities to be done for the day. Every single day and each moment in the day counts. It is important to set short term goals of the day to achieve the big targets in life. Those who are successful in life, plan and manage their time effectively

ii) Prioritizing: It is very important to prioritize what is to be done first while planning for the activities. Prioritizing is the key to successful time management. You must differentiate between the tasks that demand the urgent attention over all others. Sometimes we spend our time on things that are not very important and realize that even after spending time working on tasks we are still not able to achieve targets.

22.5.3 Physical Exercise and Nutrition

The lifestyle of a person has an important role to play in the overall wellbeing of an individual. When we are under stress we often resort to unhealthy eating habits and refrain ourselves from keeping up a healthy lifestyle. However, physical exercise on a regular basis and healthy eating habits boosts self confidence and also brings in discipline in life. Physical exercise has been associated with bringing in positivity in individuals. It has proven to be beneficial in reducing stress. Physical activity helps in releasing endorphins from the brain which are the feel good neurotransmitters of the brain. Endorphin release has been associated with producing a positive feeling in the body. Physical exercise does not always mean going for a rigorous exercise every day. Walking, jogging, skipping can also work well for the individual. Physical exercise combined with yoga and meditation is an age old technique in the Indian tradition that reduces stress and is effective in calming mind of the individuals. Apart from physical exercise, healthy nutrition also contributes to reducing stress in an individual. When under stress the body needs more energy, oxygen, circulation, and therefore more metabolic

cofactors are needed (e.g. vitamins and minerals). When under stress individuals often resorts to unhealthy foods like sugary and fatty foods. Stress makes us eat an imbalanced amount of food sometimes less sometimes more. This disturbs the nutritional intake that is required by an individual. So it is very important that a good diet must be taken during difficult times.

However, stress is detrimental to adopting any kind of healthy behaviours. Nevertheless as already discussed in cognitive strategy that if one has clarity about the crux of the problem the problem can be halved. So a healthy lifestyle must be adopted to reduce stress.

Skills to cope with stress

Take time out for yourself:- If you think that the daily hassles have taken a toll on you then you must find leisure time for yourself. It can be anything that you like doing, for example, going for a walk, going out with friends, spending time doing nothing at home etc.

Physical exercise:- As already discussed in the previous section any kind of physical exercise is positively related to the wellbeing of an individual. Spending at least 20 minutes a day can act as a stress buster for the individuals.

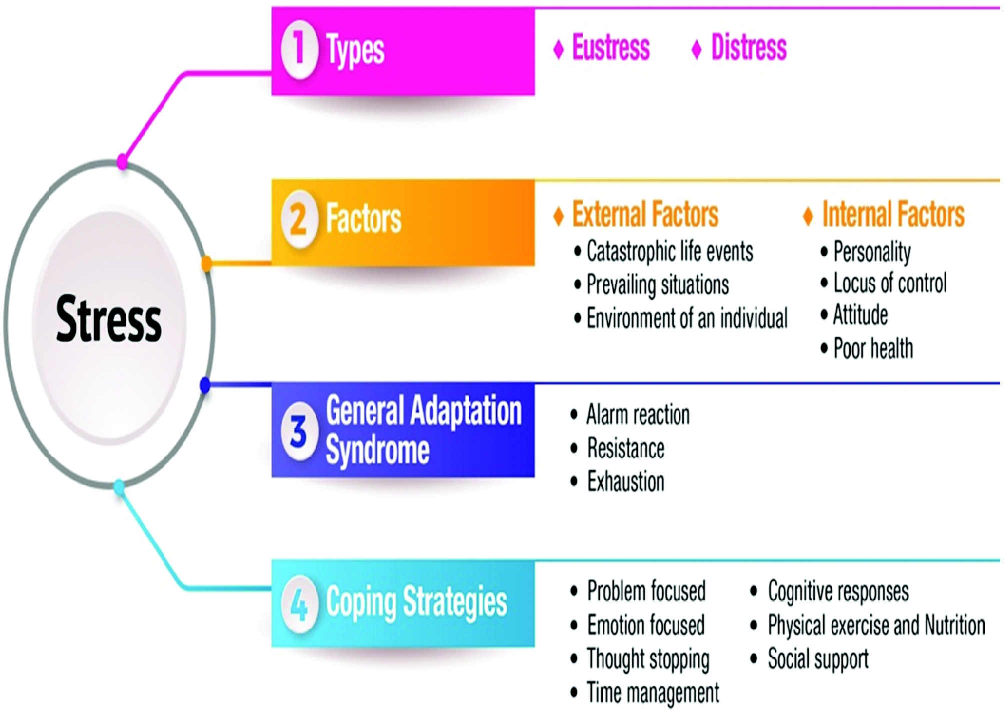
Watching movies: Watching comedy series or movies helps in relieving stress of an individual as when you watch such movies you just enjoy and do not give stress to your brain for thinking over anything else. Such movies relieve stress. Funny content also makes you laugh which relieves stress and loosens your brain allowing you to think without stress blocking the way of your thoughts. Laughing is good medicine for preventing stress, so funny movies are a good choice.

Social support: A problem shared is a problem halved. Sharing problems with people who really care helps in relieving stress. It helps in ventilating emotions. Also if sometimes because of stress we are not able to find out solutions to our problems then others can suggest better ways to deal with the situations.

Learn to say ' NO': It is not possible for anyone to do everything all at once. It is good to set priorities and say NO to some activities if you think that you are not ready for a task.

Notes

WHAT YOU HAVE LEARNT



TERMINAL EXERCISE

1. What do you understand by stress and its types?
2. How stress affects the physiological and psychological wellbeing of an individual?
3. What are the different strategies that are helpful in coping with stress?
4. What is the role of physical exercise and nutrition in enhancing the wellbeing of an individual?
5. Discuss in detail about the role of cognitive strategy in dealing with stress.
6. What are the different factors leading to stress?
7. Describe General Adaptation Syndrome (GAS) and how does it impacts the individual.
8. Effective time management helps in planning and prioritizing of work, how does it helps the individual in dealing with stress?

9. Outline the different general skills to cope up with stress.

10. Attitude plays an important role in our life, how does an optimistic attitude and pessimistic attitude impacts the individual.

ANSWERS TO INTEXT QUESTIONS

22.1

1. **Daily hassles stress:-**This kind of stress results from too many minor sources of stress. It can range from making meals to reaching office on time etc.

2. **Major life events stress:** Death of a loved one, divorce, transfer from one place to another, losing a job etc.

3. **Job stress:-**The stress related to the working environment more.

4. **Catastrophic events:** Devastation after wars, earthquakes ,tsunamis etc. This refers to those stressors that are beyond the control of a person. Such stressors might include devastation after wars, earthquakes ,tsunamis etc. These might land up individuals losing all the assets they have. Therefore, these have devastating effects on the psychological wellbeing of individuals.

5. **Eustress, Distress**

22.2

1. a iv

   b i

   c iii,

   d ii

2. Environment of an individual like background noise can create stress among individuals. It disrupts, distracts, or detracts from regular functioning.

3. (a) T

   (b) F

4. Caregiving to a family member often results in stress, affecting caregiver's physical and psychological wellbeing.

5. Individuals with an optimistic attitude believe that good things will happen to them as compared to those with pessimist's feelings. This is mainly because is optimism is related with dedication and determination which help to adapt with stressors more effectively as compared to pessimists.

22.3

1. T
2. F
3. F

23

MENTAL HEALTH PROBLEMS

Umang is a 26 year old young trainee in a multinational firm. This has been a dream job for her; however, she has been allotted the USA Project due to which most of the work is to be undertaken during late night hours. Alongwith, she has recently been engaged to her childhood friend. She is quite keen on meeting for dinners and party, but she is unable to undertake the same. Also, the burden at work is increasing. All of this is making her feel extremely low, and at time she feels nauseous also. She is losing interest in the job of her dreams and also at times does not feel like getting married. She is being guided to take care of her mental health by her friends and seek help of a psychologist. The mentioned example highlights the importance of taking care of mental health for overall wellbeing. Human beings are the most unique creatures of the universe. One of the major things that differentiate human beings from others is their capacity to think and feel. Healthy living is essential for every human being and mental health is an important precursor to happy healthy life.

LEARNING OUTCOMES

After studying this lesson, learner :

- defines and describes mental health;
- identifies the various factors that can lead to poor mental health;
- enumerates the symptoms and causes of dealing with Anxiety, Depression, and Obsessive Compulsive Behaviour;
- delineates the ways to deal with Mental Health Issues; and
- effective strategies for maintaining health and well being.

23.1 MENTAL HEALTH: AN ESSENTIAL ENTITY

Mental health is a state of balance between the individual and the surrounding world, a state of harmony between oneself and others, a co-existence between the realities of the self and that of other people and the environment.

World Health Organization defines mental health as a "state of well-being in which the individual realizes his or her own abilities, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to his or her community".

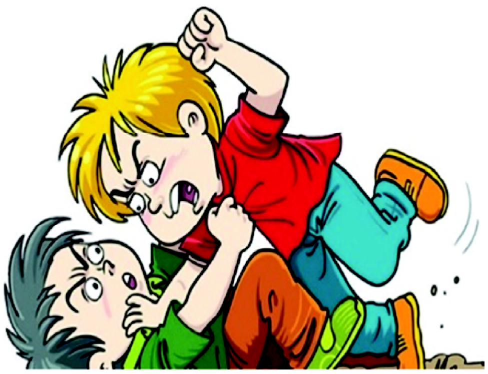
23.1.1 Characteristics of A Mentally Healthy Person

- He/She has an ability to make adjustments.
- He/She has a sense of personal worth, feels worthwhile and important.
- He/She solves his problems largely by his own effort and makes his own decisions.
- He/She has a sense of personal security and feels secure in a group, shows understanding of other people's problems and motives.
- He/She has a sense of responsibility.
- He/She can give and accept love.
- He/She lives in a world of reality rather than fantasy.
- He/She shows emotional maturity in his behavior, and develops a capacity to tolerate frustration and disappointments in his daily life.
- He/She has developed a philosophy of life that gives meaning and purpose to his daily activities.
- He/She has a variety of interests and generally lives a well-balanced life of work, rest and recreation.

Notes

23.1.2 Signs of Poor Mental Health

- Confused thinking
- Prolonged depression (sadness or irritability)
- Feelings of extreme highs and lows
- Excessive fears, worries and anxieties
- Social withdrawal
- Dramatic changes in eating or sleeping habits
- Strong feelings of anger
- Strange thoughts (delusions)
- Seeing or hearing things that aren't there (hallucinations)
- Growing inability to cope with daily problems and activities
- Suicidal thoughts
- Numerous unexplained physical ailments
- Irritability and short temper
- Aggression
- Substance use
- Poor concentration
- Being easily distracted
- Worrying more
- Finding it hard to make decisions
- Feeling less interested in day-to-day activities
- Frequent mood swings
- Feeling overwhelmed by things
- Tearfulness
- Tiredness and lack of energy
- Sleeping more or less
- Talking less and avoiding social activities
- Talking more or talking very fast, jumping between topics and ideas
- Finding it difficult to control your emotions
- Excessive Drinking



Notes

INTEXT QUESTIONS 23.1

1. What do you understand by the mental health?
2. State common signs of Poor Mental Health.
3. State true or false
   a. Mentally health person is able to solve his problems largely by his own effort and makes his own decisions. True/False
   b. Individuals with Poor Mental health are able to adapt easily in social situations. True/False

23.2 FACTORS THAT CAN LEAD TO POOR MENTAL HEALTH

Many factors are responsible for the causation of mental illness. These factors may predispose an individual to mental illness, precipitate or perpetuate the mental illness.

23.2.1 Predisposing Factors

These factors determine an individual's susceptibility to mental illness. They interact with precipitating factors resulting in mental illness.

- Genetic make up
- Physical damage to the central nervous system
- Adverse psychosocial influence

23.2.2 Precipitating Factors

These are events that occur shortly before the onset of a disorder and appear to have induced it.

- Physical stress
- Psychosocial stress

23.2.3 Perpetuating Factors

These factors are responsible for aggravating or prolonging the diseases already existing

in an individual. Psychosocial stress is an example. Thus, etiological factors of mental illness can be:

- Biological factors
- Physiological changes
- Psychological factors
- Social factors

23.2.4 Biological Factors

- **Heredity-** What one inherits is not the illness or its symptoms, but a predisposition to the illness, which is determined by genes that we inherit directly. Studies have shown that three-fourths of mental defectives and one-third of psychotic individuals have unfavorable heredity.
- **Biochemical Factors-** Biochemical abnormalities in the brain are considered to be the cause of some psychological disorders. Disturbance in neurotransmitters in the brain is found to play an important role in the development of certain mental disorders.
- **Brain Damage-** Any damage to the structure and functioning of the brain can give rise to mental illness. Damage to the structure of the brain may be due to one of the following causes: E.g. Infection of brain, injury of brain tissue, disturbance in blood glucose levels, lack of oxygen, and fluid and electrolyte imbalance, brain tumor.

23.2.5 Physiological Changes

It has been observed that mental disorders are more likely to occur at certain critical periods of life namely-puberty, menstruation, pregnancy, delivery, period after birth. These periods are marked not only by physiological (hormonal) changes, but also by psychological issues that reduce the adjustment capacity of the individual. Thus, the individual becomes more susceptible to mental illness during this period.

23.2.6 Psychological Factors

- It is observed that some specific personality types are more prone to develop certain psychological disorders. For example, those who are unsocial and

reserved (schizoid) are vulnerable to schizophrenia when they face adverse situations and psychosocial stresses.

- Psychological factors like strained interpersonal relationships at home, place of work, school or college, bereavement, loss of prestige, loss of job, etc.
- Childhood insecurities due to parents with problematic personalities, wrongful attitude of parents (over-strictness, over leniency), abnormal parent-child relationship overprotection, rejection, unhealthy comparisons), deprivation of child's essential psychological and social needs, etc.
- Social and recreational deprivations resulting in boredom, and isolation.
- Marriage problems like forced bachelorhood, disharmony due to physical, emotional, social, educational or financial incompatibility, childlessness, too many children, etc.
- Sexual difficulties arising out of improper sex education, unhealthy attitudes towards sexual functions, guilt feelings about masturbation, pre and extra-marital sex relations, worries about sexual perversions.
- Stress, frustration and seasonal variations are sometimes noted in the occurrence of mental diseases.

23.2.7 Social Factors

- Poverty, unemployment, injustice, insecurity, migration, urbanization
- Alcoholism, gambling, multiple sexual partner, broken homes, divorce, very big family, religion, traditions, political turmoil and other social crises.

INTEXT QUESTIONS 23.2

1. Enumurate predisposing factor responsible for poor mental health?

   ....

2. Enumerate psychological factors leading to mental illnesses?

   ....

3. What are social factors affecting mental health of person?

....

Notes

23.3 SYMPTOMS CAUSES AND WAYS OF DEALING WITH ANXIETY, DEPRESSION, AND OBSESSIVE COMPULSIVE BEHAVIOUR

Mental and behavioral disorders are understood as clinically significant conditions which are characterized by alterations in thinking, mood (emotions) or behavior associated with personal distress and/ or impaired functioning.

23.3.1 Mood Disorder

The person who suffers from a mood disorder experiences these emotions for a long period of time in a restricted way, remains fixed at one emotion or fluctuates on the ranges of these emotions. For example, a person can be sad for days together or he/ she can be sad one day and happy the other day regardless of the situation.

Thus, depending on the behavioural symptoms of the person mood disorders are of two types:

(i) Depression and

(ii) Bipolar disorder.

Mood disorders are characterized by disturbances in mood or prolonged emotional state. The main types of mood disorders include depression, mania and bipolar disorders. The most common mood disorder is depression, which covers a variety of negative moods and behavioural changes. In day-to-day life, we often use the term depression to refer to normal feelings after a significant loss, such as the break-up of a relationship, or the failure to attain a significant goal. People may experience the depression in different ways. It may interfere with your lifestyle, leading to impairment of function in various tasks and activity of your routine life. It can also influence relationships and some chronic health conditions. Major depressive disorder is defined as a period of depressed mood and/or loss of interest or pleasure in most activities, together with other symptoms which may include change in body weight, constant sleep problems, tiredness, inability to think clearly,

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agitation, greatly slowed behaviour, and thoughts of death and suicide. Other symptoms include excessive guilt or feelings of worthlessness. Factors predisposing towards depression: Genetic make-up, or heredity is an important risk factor for major depression and bipolar disorders. Age is also a risk factor. For example, women are particularly at risk during early adulthood, while for men the risk is highest in early middle age and old age people are likely to experience more depression. Similarly gender also plays a great role in this differential risk addition. For example, women in comparison to men are more likely to report a depressive disorder. Other risk factors are experiencing negative life events, loneliness and lack of social support.

23.3.2 Mania

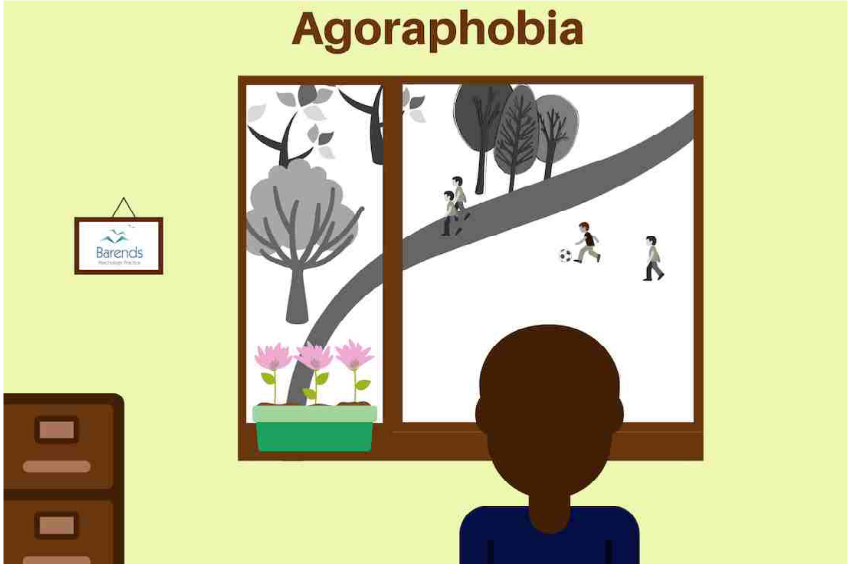
People suffering from mania become euphoric or experience 'high', can be extremely active, excessively talkative, and are easily distractible. Manic episodes rarely appear by themselves; they usually alternate with depression which means after an episode of depression, an individual is likely to experience episode of mania. Such a mood disorder, in which both mania and depression are alternately present, is sometimes interrupted by periods of normal mood. This is known as bipolar mood disorder. Where two different mood episodes occur in the same patient but during different time period. In rare cases both the symptoms occur simultaneously which is known as mixed disorder. Bipolar mood disorders were earlier referred to as manic-depressive disorders. Among the mood disorders and severe depression, the lifetime risk of a suicide attempt is highest in case of bipolar mood disorders. Several risk factors in addition to mental health status of a person predict the likelihood of suicide. These include age, gender, ethnicity, or race and recent occurrence of negative life event.

23.3.3 Anxiety Disorder

You might have experienced fear and apprehension in your life. However, if somebody persistently becomes fearful, apprehensive, and anxious without any specific reason you may call this person as having anxiety disorders.

There are different kinds of anxiety disorders in which the feeling of anxiety manifest in different forms. They include generalised anxiety disorder, which consists of prolonged, excessive, unexplained and intense worry that is not attached to any particular object. The symptoms must prolong for at least six months for the diagnosis. The symptoms include worry and apprehensive feelings about the future; hypervigilance, which involves constantly scanning the environment for dangers. It is marked by motor

tension, as a result of which the person is unable to relax, is restless, and visibly shaky and tense. Another type of anxiety disorder is panic disorder, which consists of recurrent attacks of anxiety in which the person experiences intense terror. A panic attack denotes an abrupt surge of intense anxiety rising to a peak when thoughts of particular stimuli are present. Such thoughts occur in an unpredictable manner. The clinical features include shortness of breath, dizziness, trembling, palpitations, choking, nausea, chest pain or discomfort, fear of going crazy, losing control or dying. You might have met or heard of someone who was afraid to travel in a lift or climb to the tenth floor of a building, or refused to enter a room if s/he saw a lizard. You may have also felt it yourself or seen a friend unable to speak a word of a well-memorized and rehearsed speech before an audience. These kinds of fears are termed as phobias. People who have phobias have irrational fears related to specific objects, people, or situations. Phobias often develop gradually or begin with a generalized anxiety disorder. Phobias can be grouped into three main types, i.e. specific phobias, social phobias, and agoraphobia. Specific phobias are the most commonly occurring type of phobia. This group includes irrational fears such as intense fear of a certain type of animal, or of being in an enclosed space. Intense, incapacitating fear and embarrassment when dealing with others characterizes social phobias.



Agoraphobia is the term used when people develop a fear of entering unfamiliar situations. Many agoraphobics are afraid of leaving their home. So their ability to carry out normal life activities is severely limited. Have you ever noticed someone washing their hands every time they touch something, or washing even things like

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coins, or stepping only within the patterns on the floor or road while walking? People affected by obsessive-compulsive disorder are unable to control their preoccupation with specific ideas or are unable to prevent themselves from repeatedly carrying out a particular act or series of acts that affect their ability to carry out normal activities. Obsessive behaviour is the inability to stop thinking about a particular idea or topic. The person involved, often finds these thoughts to be unpleasant and shameful. Compulsive behaviour is the need to perform certain behaviour over and over again. Many compulsions deal with counting, ordering, checking, touching and washing. Very often people who have been caught in a natural disaster (such as tsunami) or have been victims of bomb blasts by terrorists, or been in a serious accident or in a war-related situation, experience post traumatic stress disorder (PTSD). PTSD symptoms vary widely but may include recurrent dreams, flashbacks, impaired concentration, and emotional numbing.

INTEXT QUESTIONS 23.3

1. What are the type of mood disorder?

   ....

2. What are different types of anxiety disorder?

   ....

3. What are different types of phobia?

   ....

23.4 MENTAL DISORDERS AND THEIR TREATMENT

- **Preparation of case history**

  The history of the particular disorder is prepared targeting the adjustment pattern of the client with family, friends, social and occupational set up.

- **Determination of the problem**

  After preparing case history the psychotherapist identifies certain key problems which require urgent attention. This is achieved through administration of clinical tests and interview.

- **Therapeutic Session**

  Depending on the nature and severity of the problem the psychotherapist conducts session with the client with a focused treatment plan. Progress after each session is monitored and assessed, and further interventions are modified if necessary.

- **Termination of Therapeutic Intervention**

  Once it is confirmed that the sessions have yielded the desired outcome set by the psychotherapist then it is terminated. The client and the family members are asked to follow the suggestions at home and if required the client is asked to visit the psychotherapist again.

INTEXT QUESTIONS 23.4

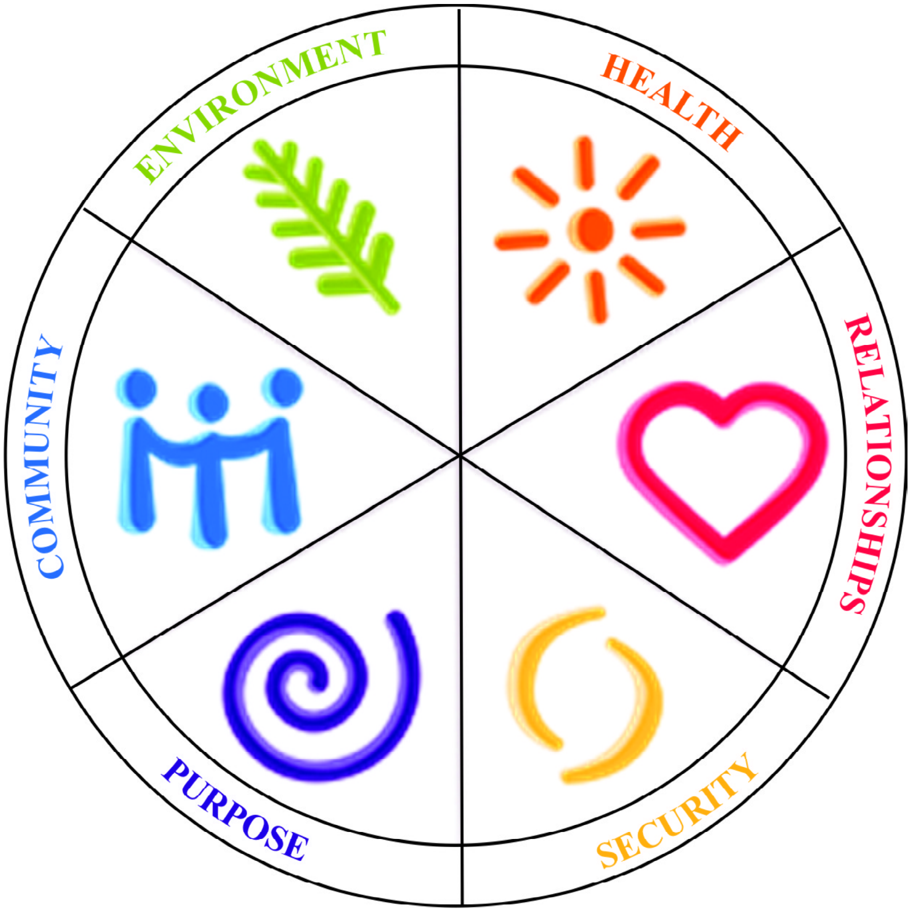
1. Explain different steps of treating mental disorder?

23.5 EFFECTIVE STRATEGIES FOR MAINTAINING HEALTH AND WELL BEING

Specific ways to promote mental health include according to WHO (World Health Organization)

- Early childhood interventions (e.g. Providing a stable environment that is sensitive to children's health and nutritional needs, with protection from threats, opportunities for early learning, and interactions that are responsive, emotionally supportive and developmentally stimulating).
- Support to children (e.g. Life skills programmes, child and youth development programmes).
- Socio-economic empowerment of women (e.g. improving access to education and microcredit schemes).
- Social support for elderly populations (e.g. Befriending initiatives, community and day centres for the aged).
- Programmes targeted at vulnerable people, including minorities, indigenous people, migrants and people affected by conflicts and disasters (e.g. Psycho-social interventions after disasters).
- Mental health promotional activities in schools (e.g. Programmes involving supportive ecological changes in schools).

- Mental health interventions at work (e.g. Stress prevention programmes).
- Housing policies (e.g. Housing improvement).
- Violence prevention programmes (e.g. Reducing availability of alcohol and access to arms).
- Community development programmes (e.g. integrated rural development).
- Poverty reduction and social protection for the poor.
- Anti-discrimination laws and campaigns.

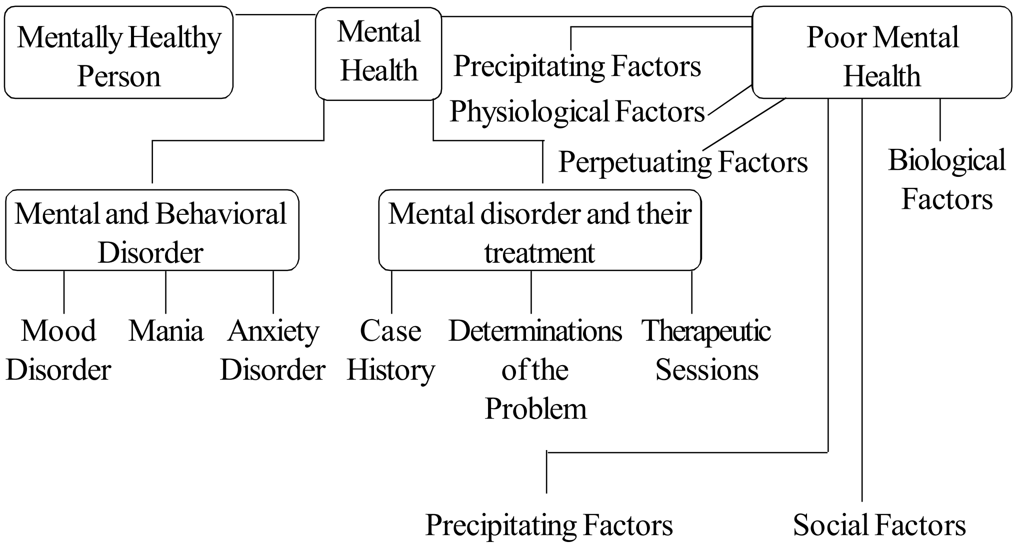


Promotion of the rights, opportunities and care of individuals with mental disorders.

ACTIVITY

Carry out a campaign in your society to promote mental health?

WHAT YOU HAVE LEARNT



TERMINAL QUESTIONS

1. Define Mental Health
2. Explain various characteristics of a Mentally Healthy Person.
3. Briefly discuss the Mental Disorders and their treatment.
4. Enumerate some effective strategies for maintaining Health and Well Being.
5. Identify the various factors that can lead to Poor Mental Health.
6. What are the different types of anxiety disorders and their clinical features?
7. Explain any two types of mood disorder and their characteristics as well as risk factors?
8. What are the steps involved in the process of psychotherapeutic intervention?
9. What are the different signs of poor mental health?
10. What are some of the psychological and social factors that can contribute to the development of mental disorders?

Notes

ANSWERS TO INTEXT QUESTIONS

23.1

1. Mental Health is a state of balance between the individual and the surrounding world, a state of harmony between oneself and others, a co-existence between the realities of the self and that of other people and the environment.
2. Some common signs of poor mental health are using Substance use, Poor concentration, Worrying more, Finding it hard to make decisions, Feeling less interested in day-to-day activities, Low mood, Feeling overwhelmed by things, Tearfulness etc.
3. (a) True

   (b) False

23.2

1. Predisposing factors
   - Genetic make up
   - Physical damage to the central nervous system
   - Adverse psychosocial influence
2. Personality type, Interpersonal relationship, childhood issues and social problems.
3. Poverty, unemployment, injustice, insecurity, migration, urbanization ,alcoholism, gambling, multiple sexual partner, broken homes, divorce, very big family, religion, traditions, political turmoil.

23.3

4. Depression and Bipolar disorder.
5. Generalized anxiety disorder, Panic disorder and Phobia.
6. Specific phobia, social phobia and agoraphobia.

23.4

1. Phase of therapy

   a Preparation of case history

   b Determination of the problem

   c Therapeutic Session

   d Termination of Therapeutic Intervention

24

PSYCHOLOGY FOR HOLISTIC DEVELOPMENT

Asha is a 30 year old woman with two children. She has never worked professionally earlier. However, after the recent demise of her husband, she had to start working to sustain her family. But, it is becoming extremely difficult for her to cope with everyday issues of life. The same is also making her feel weak physically and mentally. This makes her quite sad at times, but seeing her young kids she decided to carry on with her life and also make others happy. The mentioned example highlights the importance of dealing with all kinds of uncertainties and be resilient during adverse situations.

Holistic Development refers to human development that is meant to involve all over development of an individual especially during the childhood of a person. It accommodates physical development, mental growth, emotional development and social development.

LEARNING OUTCOMES

After studying this lesson, learner :

- defines and describes holistic development;
- identifies health and positive emotions (Happiness, life satisfaction, resilience);
- defines and describes happiness and its constructs;
- understands the concept of Life Satisfaction and Subjective Well being; and
- understands resilience and strategies to build Resilience.

Notes

24.1 MEANING OF HOLISTIC DEVELOPMENT

Holistic development is overall development of an individual which includes individual's Physical, Mental, Social, Emotional and Spiritual Growth. Holistic approach involves studying different factors which affect the development of a person/individual, how one factor affect the other factor and how it affect the individual as whole. In Psychology, Holistic means looking how they are influencing persons psychology as whole.

It is based on the assumption that an individual finds purpose and meaning in life through connections to the world outside, nature, community and value of humanitarian ground.

The holistic viewpoint is based on the premise that the system as a whole will determine how its individual component acts.

A humanistic psychologist, for example, might consider an individual's environment (including where they live and work), their social connections (including friends, family, and co-workers), their background (including childhood experiences and educational level), and physical health (including current wellness and stress levels).

For example, a psychologist might consider person's Environment (the surrounding where he live or work) social relationship (which includes friends family, colleague), Physical (Health, wellness) and Mental Health (stress or anxiety) how these are affecting individual well-being.

24.1.1. Components of Holistic Development

1. Physiological- this attribute include the sensory organs (five sense organs- skin, ear, nose, tongue and eyes).

2. Cognitive- the intellectual functions of the mind: thinking, recognizing, reasoning, analysing, projecting, synthesizing, recalling, and assessing.

3. Psychological- this component depicts how thinking, feeling, and behaving interact and happen in a person

4. Social- the manner by which an individual interacts with other individuals or groups of individuals.

5. Spiritual- the attribute of a person's consciousness and beliefs, including the values and virtues that guide and put meaning into a person's life

24.1.2. Health and Positive emotions (Happiness, life satisfaction, resilience)

Health is of prime importance of individual. It is very important to recognize your health problems. Whenever you recognize any symptom in your body it need to be address as soon as possible as the problem may progress fast whether it is mental problem or physical. You should proceed to take the necessary corrective steps at the earliest as per his/her consultation and guidance. Research suggests, having a positive mindset might help to improve your physical health as well.

24.1.3. Positive Emotions

It is often said that a smiling face indicates happiness and mental health. It is true but it misses one important information- that experiencing positive emotions like love, affection, interest, empathy, forgiveness, gratitude etc. contribute to one's state of health and well being. Recent studies indicate that the experiences of various positive emotions enhance the status of one's health. It is, therefore, important to discover, identify and create opportunities for experiencing positive emotions in every possible time and moment .If u face a problem, positive attitudes help us to look at the situation more realistically and finding alternative to problem and better way to solve it.

All emotions-whether positive or negative-are adaptive in the right circumstances. The key seems to be finding a balance between the two. Having positive outlook does not mean you never feel negative emotions, People need positive and negative emotions as well. Positive emotions expand our awareness and open up for the new ideas and creativity and negative emotions are required move through difficult situations and respond to them appropriately in the short term. Negative emotions can get us into trouble, though, if they are used excessively, and if they are causing problems like worry and anxiety.

Experts say that people who are emotionally well, have fewer negative emotions and are able to bounce back from difficulties faster. This quality is called "Resilience". Another sign of emotional wellness is being able to hold onto positive emotions longer and appreciate the good times. Developing a sense of meaning and purpose in life and focusing on what's important to you also contributes to Emotional Wellness.

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INTEXT QUESTIONS 24.1

1. Explain the importance of Resilience.
2. Elaborate on the components of Holistic Development.

24.2. HAPPINESS

According to psychology, happiness is about more than simply the experience of a positive mood. In order to describe happiness, psychologists commonly refer to as subjective well-being (Kesebir & Diener, 2008). In other words, happiness is "people's evaluations of their lives and encompasses both cognitive judgments of satisfaction and affective appraisals of moods and emotions" (Kesebir & Diener, 2008, p. 118).

There are three ways that psychologists study happiness:

1. Need and Goal Satisfaction Theories

These theories suggest that happiness results from striving to achieve appropriate goals and meeting one's fundamental human needs (Nelson, Kurtz &Lyubomirsky, in press). Deci and Ryan (2000) for example, proposed Self-determination Theory, which stipulates that wellbeing is achieved when one meets their basic human needs including autonomy, competence, and relatedness.

2. Genetic and Personality Predisposition Theories

These propose that wellbeing is influenced by genes and is associated with the personality traits of extraversion and neuroticism (Nelson et al., in press).

3. Process/activity theories

Process/activity theories argue that wellbeing may be improved by participating in activities that are engaging and require effort (Nelson et al., in press).

Psychologists ask the question, 'Is it possible to increase one's happiness?'. Some psychologists claim that making an attempt to enhance happiness is pointless because happiness levels are predetermined and stable over time (Norrish & Vella-Brodrick, 2008).

INTEXT QUESTIONS 24.2

True and False

1) According to psychologists, happiness is only about experiencing positive moods- True/False

2) Process/activity theories suggest that happiness can be improved by engaging in activities that are challenging and require effort- True/False

3) According to Norrish & Vella-Brodrick (2008), attempting to enhance happiness is pointless because happiness levels are predetermined and stable over time- True/False

24.3. LIFE-SATISFACTION

Life satisfaction is a multidimensional concept related to psychological and environmental life conditions. The term life satisfaction can be split into two words- life and satisfaction. Life is the state of functional activity peculiar to organized matter and especially to the portion of it such as, constituting an animal or plant before death (Oxford Dictionary, 1990). Satisfaction is a Latin word that means to make or do enough.

24.3.1. Definitions of Life Satisfaction

According to Hamilton (1995) in the Dictionary of Developmental Psychology, life satisfaction is the degree of contentment with one's own life style. Life satisfaction is referred as an assessment of the overall conditions of existence as derived from a comparison of one's aspiration to one's actual achievement (Cribb, 2000).

Life satisfaction gives meaning to one's life and it can be source of a feeling or self-worth. In the Indian context, most of the elderly review their past life in terms of self fulfillment (Butler 1976)

Life Satisfaction is the central aspect of human welfare. It is the ultimate goal and every human being strives to achieve this goal throughout the life. Humans are always striving toward achieving life satisfaction by establish few goals and ultimately achieving those goals, Perhaps, it can be said that the final aspiration of every human being is to attain his goals and desires and this attainment leads to life satisfaction.

In Indian Philosophy, satisfaction includes the capacity for enjoyment i.e. more enjoyment leads to more happiness. A satisfied and meaningful life involves both subjective thinking and objective component. The three foundations of a satisfied life are-

- The establishment of depth relationships;
- The commitment to projects and goals; and
- The use of stories that place life in genuinely ultimate context.

Therefore, life satisfaction is a complex index of one's adjustments, attitudes towards life and events, perception and experience of problems and interactional events.

So, to be truly satisfied and stimulated by life, a person needs to be intrinsically satisfied. It is thus apparent that a person can be happy only when he has a realistic appraisal of his abilities and potentials to develop realistic aspirations and expectations.

24.3.2. Factors Affecting Life Satisfaction

- Personal
- Environmental

24.3.2a. Personal Factors:

Satisfaction of needs - our needs or urges always creates tensions and worries in our mind. As result, we become restless and dissatisfied. The various needs are as follows-

Physiological - needs include food, clothing, dwelling & sex.

Psychological - needs include self-esteem, attitude, social intelligence, mental health, anxiety, frustration, life skills, emotional stability.

Social - needs include strong family support (satisfaction with spouse, with children and with rest of family), social participation, social support social cognitive skills, family relationships, social status and other social outlets and affiliations.

Education - It has been realized that education plays a pivotal role in the life satisfaction of an individual. Education is very much important for everyone. It dispels mental illusions and its place cultivates good thinking, knowledge, attitudes, values etc, which helps in bringing life satisfaction.

Nature of Job - Man, being a social animal needs social recognition which is marked by his status and position in the society. Job is an important factor to upgrade the social status and position of a man. Hence, suitable job gives satisfaction in life.

Economic Status - Satisfaction with housing and living conditions, with income's purchasing power and with financial solvency

Others factors includes

- Leisure Activities
- Marital Status
- Sports Participation
- Mental and Physical Health
- Positivity of Emotions
- Coping Abilities
- Ego Identity

24.3.2b. Environmental Factors

Environment includes everything that surrounds us. It is one of the important factors which influence not only the various psychological traits but also our good social behaviour. If the environment is peaceful and congenial, it helps to facilitate balanced life. Good social relationships with neighbors, collogues and participation in social activities also provide life satisfaction for example, social circle friendship, place to live, occupational and professional opportunity to develop, congenial environment of

Notes

the family , community full with all the basic facilities such as transport, safety, trust in local neighborhood.

24.4. RESILIENCE

Resilience is the process of adapting well in the face of adversity, trauma, tragedy, threats or significant sources of stress - such as family and relationship problems, serious health problems or workplace and financial stressors. It means "bouncing back" from difficult experiences.

People commonly demonstrate resilience. Being resilient does not mean that a person doesn't experience difficulty or distress. Emotional pain and sadness are common in people who have suffered major adversity or trauma in their lives. In fact, the road to resilience is likely to involve considerable emotional distress.

Resilience is not a trait that people either have or do not have. It involves behaviors, thoughts and actions that can be learned and developed in anyone.

24.4.1. Factors affecting Resilience

A combination of factors contributes to resilience. Many studies show that the primary factor in resilience is having caring and supportive relationships within and outside the family. Relationships that create love and trust, provide role models and offer encouragement and reassurance help bolster a person's resilience.

Several additional factors are associated with resilience, including:

- Positive attitude
- High Self esteem
- The capacity to manage strong feelings and impulses.

24.4.2.Strategies for Building Resilience

Developing resilience is a personal journey. All people do not react in a similar names to traumatic and stressful life events. An approach to building resilience that works for one person might not work for another. People adopt varying strategies to develop reiliences

Some variation may reflect cultural differences. A person's culture might have an impact on how he or she communicates feelings and deals with adversity - for example,

whether and how a person connects with significant others, including extended family members and community resources.

24.4.3. Ways to build resilience

Creating Connections- Good relationships with close family members, friends or others are important. Accepting help and support from individuals strengthens resilience. Eg, Being active in civic groups, faith-based organizations, or other local groups providing social support.

Dealing with challenging problems- Interpret and Response to difficult events can be changed. Looking beyond the present is necessary.

Acceptance of change- Accepting circumstances that cannot be changed can help in focusing on circumstances that can be altered.

Making goals- Developing some realistic goals. SMART (Specific, Measurable, Attainable, Relevant, Time Bound) goals can be created that are attainable.

Decisive actions - Acting on adverse situations and taking decisive actions, rather than detaching completely from problems and stresses and wishing they would just go away.

Nurturing a positive view- Developing confidence in an individual's ability to solve problems and trusting their instincts helps build resilience.

Keeping things in perspective- Even when facing very painful events, trying to consider the stressful situation in a broader context and keeping a long-term perspective.

Maintaining an optimistic outlook- An optimistic outlook enables to expect that good things will happen in life.

Introspection and caring for oneself- Paying attention to own needs and feelings. Engaging in activities that are enjoyable and relaxing. Meditation and spiritual practices help individuals build connections and restore hope.

24.5. INTERVENTIONS FOR HEALTH AND WELL-BEING

Health and well-being are significant aspects of human existence. The various interventions that be utilized are:

1. Diet & Life style

Healthy Diet can help in maintaining a Positive Lifestyle. A healthy lifestyle includes eating balanced diet as well as healthy habits such as not taking Alcohols, drugs etc.

2. Exercise

Exercising regularly can help an individual to keep oneself physically healthy. Proper exercise can maintain good health.

3. Yoga and Meditation

Yoga and Meditation can be the healthy positive alternatives that can help an individual maintain Positive Well-being. Current research also suggests that meditating and doing yoga can boost overall well-being and resilience to stress factors. The potential health benefits of yoga include: Stress reduction. A number of studies have shown that yoga may help reduce stress and anxiety. It can also enhance mood and overall sense of well-being.

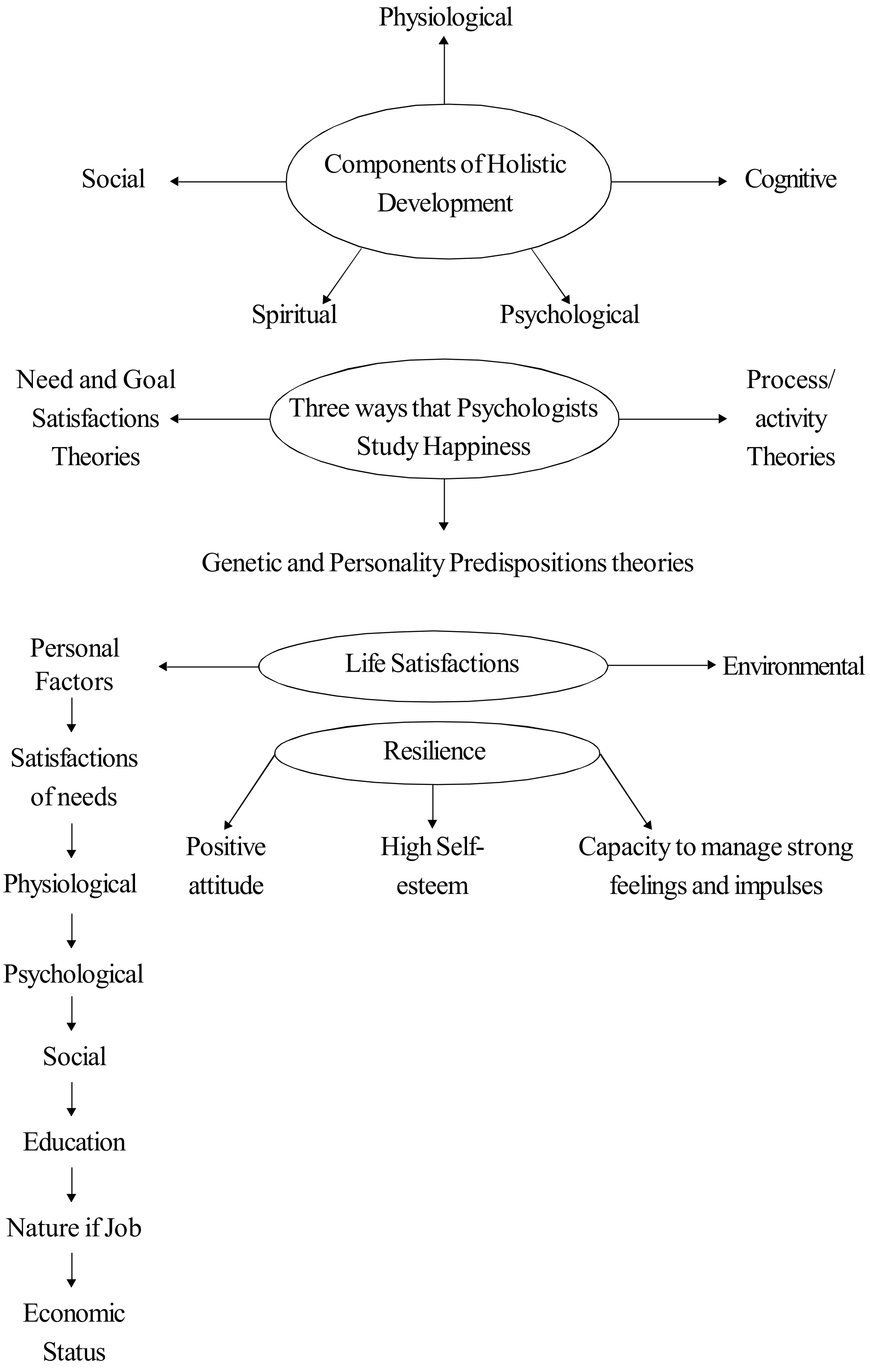
Meditation can improve wellbeing and quality of life. There is also evidence that it can help people manage insomnia, depression and anxiety. Some research suggests that meditation physically changes the brain and could help: increase ability to process information, control the brain's response to pain.

4. Developing Positive emotions

Developing Positive Emotions can help an individual to practice Resilience and also deal with day to day issues. Increased positive emotion can build physical, intellectual, social and psychological resources (B. L. Fredrickson, Tugade, Waugh, & Larkin, 2003).Positive emotion is more than just 'happiness'. There are a range of positive emotions, including amusement, hope, interest, joy, love, compassion, gratitude, and pride. They can be developed by:

- Practicing to be grateful
- Spending time with people
- Doing activities that are enjoyable, such as hobbies or pastimes
- Playing with children, pets or friends
- Listening to music
- Exercising.

WHAT YOU HAVE LEARNT



Notes

INTEXT QUESTIONS

1. Explain about Holistic Development.
2. What are the factors affecting life satisfaction?
3. Describe the importance of Resilience.
4. Explain the Strategies For Building Resilience.
5. Describe certain ways to build Resilience.
6. Discuss the interventions for health and well-being.
7. How can positive emotions be developed to improve an individual's overall sense of resilience and ability to cope with day-to-day issues?
8. How does a humanistic psychologist consider different factors, such as environment, social connections, background, and physical health, when examining an individual's overall well-being?
9. What are the components of holistic development, and how do positive emotions contribute to an individual's state of health and well-being?
10. What are the three ways that psychologists study happiness and what do they propose about the factors that influence happiness?

ANSWERS TO INTEXT QUESTIONS

24.1

1) Resilience is an essential quality for emotional wellness as it enables individuals to cope with and bounce back from difficult situations or challenges. Life is full of ups and downs, and everyone experiences setbacks and hardships at some point in their lives. Resilience is the ability to adapt to such challenges, maintain a positive attitude, and recover from adversity.

2) Physiological- this attribute include the sensory organs (five sense organs- skin, ear, nose, tongue and eyes).

Cognitive- the intellectual functions of the mind: thinking, recognizing, reasoning, analysing, projecting, synthesizing, recalling, and assessing.

Psychological- this component depicts how thinking, feeling, and behaving interact and happen in a person

Social- the manner by which an individual interacts with other individuals or groups of individuals.

Spiritual- the attribute of a person's consciousness and beliefs, including the values and virtues that guide and put meaning into a person's life

24.2

1) False. Psychologists refer to happiness as subjective well-being, which encompasses both cognitive judgments of satisfaction and affective appraisals of moods and emotions.

2) True. Process/activity theories argue that engaging in activities that are challenging and require effort can improve well-being.

3) True. Norrish & Vella-Brodrick (2008) claimed that attempting to enhance happiness is pointless because happiness levels are predetermined and stable over time.